

The Straits Settlements medical report.

Contributors

Straits Settlements. Medical Department.

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STRAITS SETTLEMENTS.

The Straits Settlements Medical Report for the year 1919.

POPULATION AND HEALTH.

1. The following table gives the estimated population and the birth and death-rates for the years 1918 and 1919:—

| SETTLEMENT. | Estimated mean Population. | | Birth Nos. | | Death Nos. | | Birth Ratio per mille. | | Death Ratio per mille. | |
|--------------------|----------------------------|---------|------------|--------|------------|--------|------------------------|-------|------------------------|-------|
| | 1918. | 1919. | 1918. | 1919. | 1918. | 1919. | 1918. | 1919. | 1918. | 1919. |
| Singapore ... | 369,777 | 380,392 | 9,585 | 10,233 | 15,372 | 12,590 | 25.92 | 26.90 | 41.57 | 33.10 |
| Labuan ... | 6,848 | 6,922 | 249 | 219 | 198 | 140 | 36.36 | 31.63 | 28.91 | 20.22 |
| Penang ... | 151,210 | 152,642 | 4,110 | 4,603 | 6,685 | 6,366 | 27.18 | 30.16 | 44.91 | 41.71 |
| Province Wellesley | 139,538 | 141,115 | 4,109 | 4,361 | 5,676 | 3,533 | 29.45 | 30.90 | 40.68 | 25.04 |
| Dindings ... | 11,294 | 11,982 | 349 | 274 | 730 | 358 | 30.90 | 22.87 | 64.64 | 29.88 |
| Malacca ... | 149,052 | 153,008 | 5,300 | 5,934 | 7,633 | 4,970 | 35.55 | 38.78 | 51.21 | 32.48 |
| Total ... | 827,719 | 846,061 | 23,702 | 25,624 | 36,294 | 27,957 | 28.64 | 30.29 | 43.85 | 33.04 |

The figures for the European population are:—

| SETTLEMENT. | Estimated mean Population. | | Birth Nos. | | Death Nos. | | Birth Ratio per mille. | | Death Ratio per mille. | |
|----------------------|----------------------------|-------|------------|-------|------------|-------|------------------------|-------|------------------------|-------|
| | 1918. | 1919. | 1918. | 1919. | 1918. | 1919. | 1918. | 1919. | 1918. | 1919. |
| Straits Settlements. | 8,708 | 8,929 | 189 | 162 | 86 | 97 | 21.70 | 18.14 | 9.88 | 10.86 |

The population at the last Census (1911) was 711,951, and it is estimated at 846,061 for 1919. This is computed by geometrical progression as for normal times on the basis of the Census figures for 1901 and 1911.

2. The total immigrants from China were in:—

| | | | | | | |
|----------|-----|-----|-----|-----|-----|---------|
| 1915 ... | ... | ... | ... | ... | ... | 95,735 |
| 1916 ... | ... | ... | ... | ... | ... | 183,399 |
| 1917 ... | ... | ... | ... | ... | ... | 155,167 |
| 1918 ... | ... | ... | ... | ... | ... | 58,421 |
| 1919 ... | ... | ... | ... | ... | ... | 70,912 |

Births.

3. The births registered during the year numbered 25,624 as compared with 23,702 in 1918. The ratio per mille is 30.29 against 28.64 in 1918 and 20.65 in 1917. Since the Registration Law (1897) came into force, the highest ratio registered was in 1917, viz., 30.65.

Deaths.

4. The deaths from all causes registered in 1919 were 27,957 as against 36,294 in 1918. This corresponds to a ratio per mille of 33'04, a considerable decrease compared with that for 1918 when it was 43'85. The average death-rate for the last ten years is 37'01.

Infantile Mortality.

5. The infantile mortality gives a rate of 212'42 per mille as against 232'68 per mille in 1918 and 266'92 per mille in 1917, these figures exclude all children born elsewhere than in the Colony.

The highest infantile mortality was among the Chinese, 246'40, the Indians coming next with 241'06.

European Officers.

6. Table shewing the sick, invaliding and the deaths of European Officials of all ranks:—

| | 1918. | 1919. |
|---|-------|-------|
| (1) Total number of officials on the Establishment | 437 | 421 |
| (2) Average number resident in the Colony | 275 | 295 |
| (3) Total number on sick list | 222 | 184 |
| (4) Total number of days on sick list ... | 2,370 | 2,171 |
| (5) Total number invalided | 2 | 6 |
| (6) Total deaths | 4 | 3 |
| (7) Total deaths in the Colony | 2 | 3 |
| (8) Average daily number on the sick list ... | '61 | '50 |
| (9) Average number of days on the sick list | 10'67 | 11'80 |
| (10) Percentage of deaths to average number resident | 1'45 | '01 |

Zymotic Diseases.

7. The following table gives the number of cases of Zymotic Diseases occurring in the Colony during 1918 and 1919, excluding imported cases:—

| SETTLEMENT. | PLAGUE. | | | | CHOLERA. | | | | SMALL-POX. | | | |
|------------------------|---------|---------|--------|---------|----------|---------|--------|---------|------------|---------|--------|---------|
| | 1918. | | 1919. | | 1918. | | 1919. | | 1918. | | 1919. | |
| | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Singapore ... | 178 | 160 | 11 | 8 | 1 | 1 | 79 | 59 | 11 | 4 | 11 | 3 |
| Penang ... | 51 | 44 | 8 | 8 | 2 | 2 | 1 | 1 | 83 | 26 | 398 | 142 |
| Province Wellesley ... | ... | ... | ... | ... | ... | ... | 13 | 11 | 110 | 31 | 65 | 21 |
| Malacca ... | ... | ... | ... | ... | ... | ... | 1 | ... | 6 | ... | ... | ... |
| Labuan ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Dindings ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 | ... |
| Total ... | 229 | 204 | 19 | 16 | 3 | 3 | 94 | 71 | 210 | 61 | 480 | 166 |

Vaccination.

8. During the year there were 35,941 vaccinations: of these 21,894 were successful, 567 failed and 13,480 were not seen. Most of the "not seen" occurred amongst up-country people in Malacca.

Diphtheria.

9. The number of deaths from Diphtheria was 11 compared with 8 in 1918. Of the 11 cases treated in hospitals, 4 ended fatally.

Enteric Fever.

10. Enteric Fever was responsible for 94 deaths, the number for 1918 being 145. The number of cases of Enteric Fever treated in hospitals was 142 with 63 deaths.

Beri-beri.

11. Beri-beri accounted for 1,430 deaths. In 1918 the number of deaths was 1,958 and for 1917, 2,075. The number of cases treated in hospitals was 1,556 with 236 deaths.

There has been a marked reduction in mortality from this disease, to a great extent this reduction can be accounted by the improvement in the quality of much of the rice recently imported into the Straits. The "broken" and "cargo" rice which has been used during the past twelve months contains a large proportion of lightly milled grain, this rice is nutritious, wholesome and very palatable, it is not unsimilar in appearance and taste to the "country rice" grown and prepared for home use by the natives of Malaya. It is to be feared that the cessation of the world-wide shortage of this grain will be followed by the re-introduction into this country of the highly polished white rice so greatly sought after by large sections of our community but which are very defective in nutritive constituents and productive of this fatal and distressing disease.

Venereal Diseases.

12. The total cases of Venereal diseases treated in the hospitals in 1919 were 3,451 with 77 deaths. In 1918 the figures were 2,774 and 101 respectively. Unfortunately these figures have little relation to the total amount of sickness and mortality produced by the disease, they merely represent, for the most part, those cases whose admission to hospital is brought about directly in consequence of one or other of the more troublesome or obvious manifestations of this complaint. The origin of a large amount of disease and death at our hospitals and elsewhere which does not appear in our returns under the nomenclature of "Venereal Diseases" can be traced ultimately to an antecedent attack of that complaint.

Tuberculosis.

13. The total deaths registered from Phthisis were 3,112, against 3,675 in 1918 and 3,084 in 1917.

Dysentery.

14. Dysentery accounted for 1,209 deaths as against 1,362 and 1,064 deaths in 1918 and 1917 respectively. Of the cases treated in hospitals, which totalled 1,708, 632 ended fatally, against 2,481 cases with 739 deaths in 1918.

Malaria.

15. Malaria was responsible for 4,843 deaths compared with 4,777 deaths in 1918 and 3,766 deaths in 1917. The corresponding figures for "Fever not classified" were 2,132, 6,988 and 4,030 respectively. Malaria admissions to the hospitals of the Colony were 6,446 with 472 deaths, compared with 7,726 cases and 766 deaths in 1918.

Ankylostomiasis.

16. The total numbers of Ankylostomiasis cases treated in the hospitals of the Colony for the last five years are:—

| Year. | | Remained from pre- vious year. | Admitted during the year. | Total treated. | Deaths. |
|-------|-----|--------------------------------------|---------------------------------|-------------------|---------|
| — | | — | — | — | — |
| 1915 | ... | 70 | 932 | 1,002 | 141 |
| 1916 | ... | 49 | 1,206 | 1,255 | 214 |
| 1917 | ... | 83 | 1,443 | 1,526 | 268 |
| 1918 | ... | 122 | 1,592 | 1,714 | 385 |
| 1919 | ... | 78 | 1,110 | 1,188 | 241 |

17. Total treated and mortality in all hospitals for the past six years:—

| Year. | Number Treated. | | | Number of Deaths. | | | Percentage of Deaths to Total Treated. | | |
|----------|-----------------|----------|--------|-------------------|----------|--------|--|----------|--------|
| | Europeans. | Natives. | Total. | Europeans. | Natives. | Total. | Europeans. | Natives. | Total. |
| 1914 ... | 2,555 | 37,926 | 40,481 | 111 | 3,642 | 3,753 | 4'34 | 9'6 | 9'27 |
| 1915 ... | 2,305 | 30,916 | 33,221 | 92 | 2,889 | 2,981 | 3'99 | 9'34 | 8'97 |
| 1916 ... | 1,843 | 32,623 | 35,466 | 82 | 3,289 | 3,371 | 4'45 | 9'78 | 9'50 |
| 1917 ... | 1,904 | 34,559 | 36,463 | 83 | 4,006 | 4,089 | 4'36 | 11'59 | 11'21 |
| 1918 ... | 3,197 | 39,836 | 43,033 | 143 | 5,698 | 5,841 | 4'47 | 14'30 | 13'57 |
| 1919 ... | 2,944 | 37,812 | 40,756 | 139 | 4,602 | 4,741 | 4'72 | 12'17 | 16'89 |

Singapore Hospitals.

18. The number of European cases treated in the General Hospital during the year under review was 1,732 against 1,398 in 1918. The natives numbered 5,221. The total deaths were 559 (6 Europeans and 475 natives).

Ten thousand eight hundred and ninety-three patients were treated at the Tan Tock Seng's Hospital with 1,348 deaths, the numbers for Europeans being 546 and 25 respectively. The average daily sick was 641'65 compared with 657 in 1918.

The number of patients remaining in the Lunatic Asylum on 1st January, 1919, was 375 and the admissions during the year were 216, making the total treated of 591 patients (41 Europeans and 550 natives). The total deaths were 4 Europeans and 79 natives, and the daily average sick being 359.

Penang Hospitals.

19. The total number of patients treated in all Penang Hospitals, excluding Province Wellesley is 12,960 of whom 501 were Europeans and 12,459 natives. Of these 1,725 died (23 Europeans and 1,702 natives). In 1918 the total treated was 10,813 and the total deaths 1,452.

Province Wellesley Hospitals.

20. On the 1st January, 1919, there remained in the Hospitals in Province Wellesley 111 patients and during the year 2,824 cases were admitted making a total treated of 2,935, all these being natives. The total deaths were 279. In 1918 the total cases treated were 3,081 with 372 deaths.

Malacca Hospitals.

21. Four thousand and forty-three patients were treated in all the hospitals at Malacca during the year under review with a mortality of 536 cases. In 1918 the figures were 6,435 and 1,211 respectively.

All Hospitals.

22. The total number of patients treated and the total deaths in the hospitals of the Colony for some of the more important diseases are shewn

in the subjoined statement with the corresponding figures for the four preceding years:—

| Diseases. | 1915. | | 1916. | | 1917. | | 1918. | | 1919. | |
|-------------------------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | Total treated. | Total Deaths. | Total treated. | Total Deaths. | Total treated. | Total Deaths. | Total treated. | Total Deaths. | Total treated. | Total Deaths. |
| Malaria Fever ... | 5,590 | 311 | 7,584 | 564 | 7,355 | 613 | 7,726 | 766 | 6,446 | 472 |
| Dysentery ... | 1,267 | 407 | 1,230 | 405 | 1,516 | 563 | 2,481 | 739 | 1,708 | 632 |
| Diarrhœa ... | 526 | 50 | 447 | 61 | 431 | 28 | 407 | 41 | 420 | 35 |
| Beri-beri ... | 540 | 92 | 755 | 104 | 1,520 | 299 | 1,725 | 283 | 1,556 | 236 |
| Phthisis and Tuberculosis ... | 1,162 | 551 | 1,127 | 519 | 1,214 | 594 | 1,337 | 692 | 1,442 | 686 |
| Enteric ... | 100 | 44 | 108 | 31 | 116 | 42 | 251 | 106 | 142 | 63 |
| Ulcers ... | 2,743 | 2 | 2,617 | 1 | 2,323 | 1 | 2,432 | 2 | 3,196 | 1 |
| Venereal Diseases ... | 4,124 | 56 | 3,360 | 83 | 3,232 | 82 | 2,774 | 101 | 3,451 | 77 |
| Ankylostomiasis ... | 1,002 | 141 | 1,255 | 214 | 1,526 | 268 | 1,714 | 385 | 1,188 | 241 |

Out-Door Dispensaries.

23. Thirty thousand and ninety-seven patients sought medical assistance as out-patients in the different out-door dispensaries of the Colony compared with 33,297 in 1918 and 31,174 in 1917.

Medical School.

24. The total number of students on the Roll for the "Full Course" of L. M. S. is 135, of whom 21 joined in the year under review. Thirteen students completed their course and obtained the L. M. S. Diploma. Hospital Assistants (2-year course) are now under training. Four candidates were successful in obtaining the Dental certificates.

Miscellaneous

25. Twenty-nine Medical Practitioners were registered during the year. The total number on the Register now is 529.

26. Fifty-three licences were issued to Chemists and Druggists and Medical Practitioners in Singapore and 44 licences to Dentists under the Deleterious Drugs Ordinances.

27. Sixty-four licences were issued under the Poisons Ordinance.

28. The Hospital Board ambulance answered 249 calls for conveying cases to hospitals.

29. The following were members of the Hospital Board during the year excluding Government Ex-officio members:—

Honourable Mr. M. J. UPCOTT.

Dr. J. A. R. GLENNIE.

Dr. E. A. ELDER.

Mr. W. PEEL.

Mr. GOH TEIK CHEE.

30. I proceeded on leave on furlough on 1st April, 1919, and Dr. CROUCHER acted for me to the end of the year.

Dr. W. H. FRY was appointed and assumed duty as Chief Medical Officer, Penang, on the 15th August, 1919.

Drs. TAYLOR and KYLE returned to the Colony from duty with the Royal Army Medical Corps on 14th November and assumed duties in Penang.

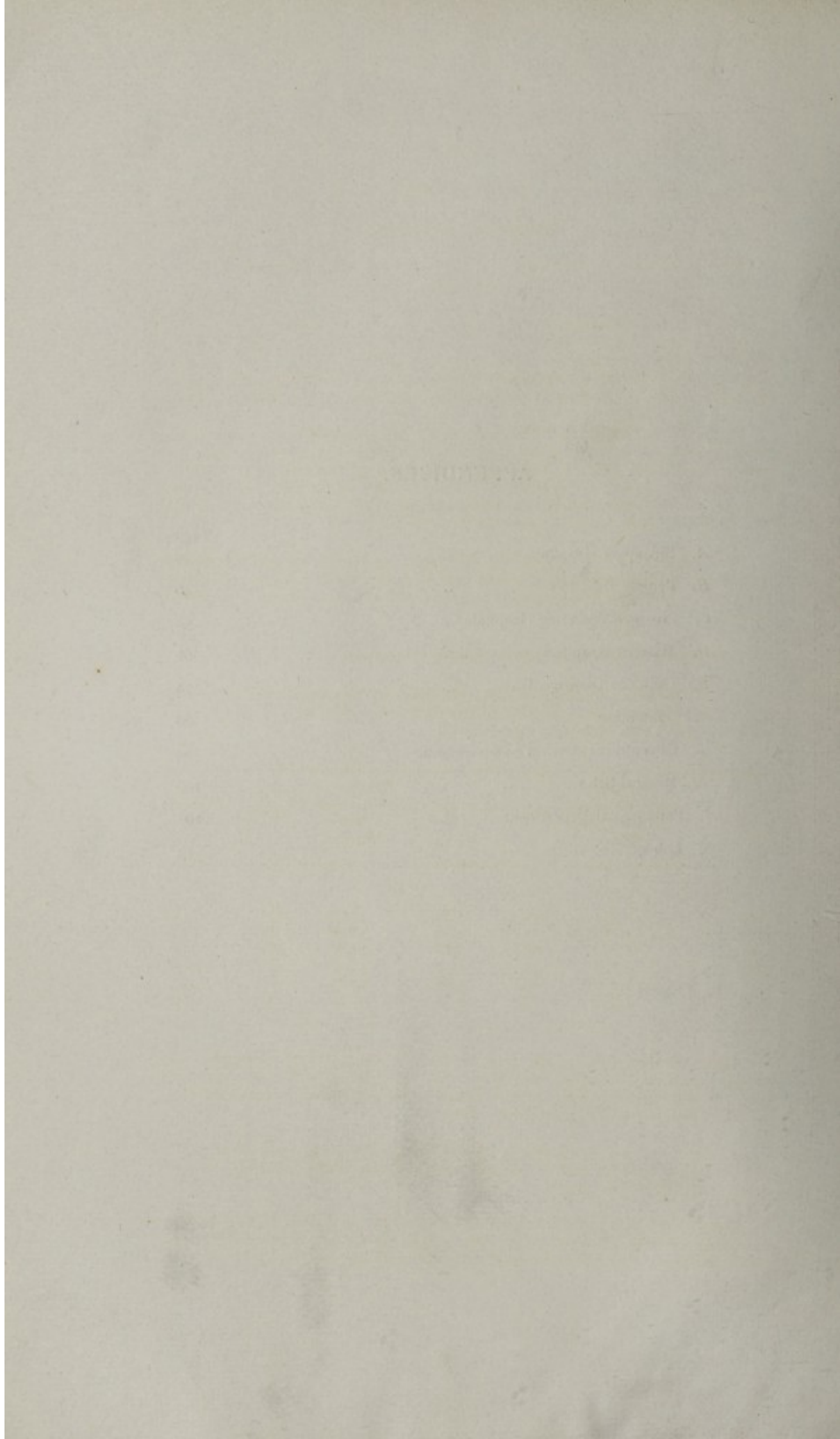
Dr. FITZGERALD returned in December, 1919.

Dr. J. S. WEBSTER returned from war service in August and Dr. A. G. H. SMART in December, the former being stationed in Singapore and the latter seconded to the service of the Kedah Government.

S. LUCY,
Principal Civil Medical Officer, S. S.

APPENDICES.

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APPENDIX A.

SINGAPORE.

GENERAL HOSPITAL:

REPORT BY DR. J. HARRISON, M.D., C.M., *Acting Chief Medical Officer-in-charge.*

1. *Hospital Buildings.*—These have been kept in repair. As it is proposed to commence the construction of a new hospital very shortly, but few additions have been made to the present buildings. This new hospital is urgently needed as increasing difficulty is being experienced in accommodating the cases. The congestion is particularly noticeable in the Officers' Wards.

A temporary office has been constructed and the staff took possession of it in September; the old office was then converted into a ten bedded ward which, despite the difficulty experienced in obtaining the necessary furniture, was opened at the end of September. It is proposed to use it for the treatment of cases of Venereal Disease as it will permit of the necessary segregation. The additional beds have also proved very useful.

For temporary use during the Influenza epidemic, an additional ward walled and roofed with attap, which can be burnt after use, was instituted. It was placed alongside the present native wards where a cement floor already existed.

The Native Wards were limewashed and repainted.

2. *Work done.*—A comparative table shewing the total number of patients treated in all the wards (exclusive of the Maternity Hospital) during the past six years gives the following figures:—

| Year. | Number of patients treated in European Wards. | Died. | Percentage. | Number of patients treated in Native Wards. | Died. | Percentage. |
|----------|---|-------|-------------|---|-------|-------------|
| 1914 ... | 941 | 56 | 5·84 | 3,482 | 326 | 9·25 |
| 1915 ... | 1,084 | 51 | 4·68 | 3,258 | 246 | 7·59 |
| 1916 ... | 1,038 | 65 | 6·26 | 3,350 | 297 | 8·09 |
| 1917 ... | 1,120 | 49 | 4·37 | 3,800 | 382 | 10·05 |
| 1918 ... | 1,206 | 59 | 4·89 | 4,683 | 499 | 13·01 |
| 1919 ... | 1,558 | 83 | 5·32 | 4,771 | 470 | 9·85 |

These figures shew in the case of the European Wards a gradual and annual substantial increase despite the fact that many of the younger men have not yet returned from service; hence a still further and greater increase is to be expected in the immediate future.

3. Of the above 83 deaths in the European Wards 34 took place within 48 hours of admission and of the 475 deaths in the Native Wards, 109 took place within the same period.

The revised death-rate therefore is for the European Wards 3·14 per cent and for the Native Wards 6·35 per cent. This shews a marked improvement on the previous year when the death-rate was 3·48 per cent and 7·17 per cent.

4. The chief diseases treated in the Wards are stated below:—

| Disease. | 1919. | 1918. | 1917. | 1916. | 1915. |
|--------------------------|-------|-------|-------|-------|-------|
| Malaria | 766 | 1,067 | 790 | 774 | 510 |
| Enteric Fever | 65 | 118 | 69 | 58 | 54 |
| Phthisis | 209 | 160 | 110 | 133 | 114 |
| Dysentery | 205 | 84 | 81 | 73 | 74 |
| Venereal Disease | 432 | 373 | 301 | 318 | 355 |
| Beri-beri | 65 | 95 | 76 | 28 | 29 |
| Pneumonia (Lobar) | 137 | 119 | 83 | 54 | 50 |
| Ankylostomiasis | 143 | 195 | 194 | ... | ... |
| Injuries | 1,082 | 1,017 | 853 | 1,038 | 1,022 |

The gradual increase in the number of cases of Pneumonia is noticeable. In addition to the 137 cases of Lobar Pneumonia, 62 cases of Broncho-Pneumonia were admitted. The lobar variety is due to the Pneumococcus and shows a high mortality (72 deaths) which is most depressing. Usually both bases are affected and it is not customary to find the patients entering hospital before the signs of consolidation are well marked. The native population does not offer much resistance to the infection, a point particularly noticeable in the case of Tamils: hence the high mortality. The number of cases was particularly large during the last two months of the year when it was, on several occasions, the most prevalent disease in the native wards.

Occasional cases of Influenza are still being admitted but there has been no resemblance to an epidemic. The total number of cases for the year was 67; they were generally of a mild variety, showed no pulmonary complications and the death-rate has been 1·5 per cent.

Sporadic cases of Cerebro-Spinal Fever are met with. There has been no epidemic of infectious diseases. Of the other diseases the most prevalent were Bronchitis—182 cases, Diarrhœa—87 cases and Disease of the Eye 75.

As regards Venereal Diseases the number of people presenting themselves for treatment shows a gratifying increase: of the 432 cases 144 were cases of Primary Syphilis, 104 of Secondary Syphilis, 19 of Tertiary Syphilis, 100 of Gonorrhœa and 65 of Soft Sores. Here again it is unfortunate that the natives do not come for treatment at an earlier stage, but it is of common occurrence now to be asked to treat the patient with Salvarsan and its later substitutes. The efficacy of that remedy in removing the outward signs of the disease has been quickly realised by them but they are impatient and rarely submit to a full course.

The chief causes of death were:—Tuberculosis 87, Pneumonia (Lobar) 75, Broncho-Pneumonia 21, Dysentery 39, Malaria 49, Beri-beri 24, Ankylostomiasis 26.

5. *Native Police.*—There were 943 admissions to hospital as compared with 849 in 1918 and 320 in 1917, this figure was made up as follows:—Sikhs 410, Malays 328, Other Indians 142, Chinese 58, Javanese 5.

The chief diseases under treatment were Bronchitis 148, Injuries 134, Malaria 144, Venereal Disease 76; the last-named disease was mostly amongst the Malays who also suffer from Scabies to an appreciable extent.

Several of the Sikh police were admitted suffering from Asthma: it is questionable whether such police constables should be retained in the service as it renders them unreliable in the event of an emergency. At present, each case is considered on its merits.

6. *X-Ray Department.*—The apparatus continues to give excellent results and is in much more frequent use: the operator is now employed daily

and usually for several hours at a time. Nothing but praise can be given to the Coolidge tube which is now used exclusively, both for radiography and X-ray therapeutics. The only drawback is that, owing to the humidity of the atmosphere and the resulting leakage from the high tension wires, it is not possible to employ as powerful a current as the apparatus will stand, hence the difficulty in employing instantaneous photography. Increasing use is being made of the apparatus in the diagnosis of abdominal conditions after bismuth meals and enemata and if the present rate of progress is maintained a whole-time X-ray specialist will find himself busily engaged. More work is being done in the field of therapeutics, especially for chronic cutaneous conditions and with satisfactory results.

In all 316 radiograms were taken in addition the apparatus is frequently used for screening as it is now customary to put up fractures with the aid of the X-rays and so ensure the more certain apposition of the fragments.

7. *Staff.*—Dr. CROUCHER was in charge until the 1st of May, 1919, when he was succeeded by Dr. HARRISON. I took over from the latter on August 27th.

The surgical work has been under the care of Mr. C. J. SMITH, F.R.C.S. (E.), throughout the year.

Mr. NORRIS, Assistant Surgeon, has acted on several occasions as Medical Officer, European Wards. The Native Wards have been staffed by Mr. NORRIS, Mr. PECK and Mr. SUAREZ.

Miss PAUL arrived from home on 7th December, 1918, and assumed duty as Matron.

Among the Sisters and Nurse Probationers there have been many changes.

Mr. JONES, Attendant, arrived on June 1st, 1919, on demobilisation.

I attach a report by Mr. SMITH, F.R.C.S. (E.) on the surgical work performed during the year.

SURGERY—GENERAL HOSPITAL 1919-1920. ANNUAL REPORT BY MR. C. J. SMITH, Senior Surgeon.

| Pathological condition on Operation performed. | Sex. | Nation-ality. | Cured. | Relieved. | Died. | Observations. |
|--|------|---------------|--------|-----------|-------|---|
| GYNÆCOLOGICAL:— | | | | | | |
| <i>Ovariectomy</i> , Torsion of pedicle ... Dermoid Cyst { | F | A | 1 | ... | ... | |
| ... | F | A | 2 | ... | ... | |
| ... | F | E | 6 | ... | ... | |
| <i>Hysterectomy</i> , (Wertheim) Carcinoma ... | F | E | 1 | ... | ... | |
| Total ... | F | A | 1 | ... | ... | |
| Sub-total ... | F | A | 5 | ... | ... | |
| ... | F | E | 3 | ... | ... | |
| ... | F | A | 3 | ... | 1 | Late operation of the instrumentation infective peritonitis Dr. BURNE. |
| <i>Caesarean Section</i> ... | F | E | 1 | ... | ... | |
| ... | F | A | 1 | ... | 1 | Large hemorrhage admitted in collapsed condition. Death 5 hours later. |
| <i>Ectopic Gestation</i> ... Ruptured | F | E | 2 | ... | ... | |
| ... | F | E | 3 | ... | 1 | Spreading peritonitis. |
| <i>Salpingectomy Pyosalpinx</i> ... | F | A | 3 | ... | 1 | Hysterectomy also performed, dense adhesions, shock. |
| <i>Shortening of round Ligaments</i> ... Baldy | F | A | 4 | ... | ... | |
| ... | F | E | 5 | ... | ... | |
| ... | F | E | 3 | ... | ... | |
| <i>Broad Ligament Cyst</i> ... Alexandra Adams | F | A | 1 | ... | ... | |
| ... | F | A | 1 | ... | ... | |
| <i>Myomectomy Sub-peritoneal...</i> ... Excision | F | E | 1 | ... | ... | |
| ... | F | A | 1 | ... | ... | |
| ... | F | A | 2 | ... | 1 | Sarcomatous degeneration secondary hemorrhage in a sloughing condition following confinements. |
| <i>Recto Vaginal fistula</i> ... plastic | F | A | 1 | ... | ... | |
| <i>Perineorrhaphy</i> ... | F | A | 2 | ... | ... | |
| <i>Plastic on Cervix</i> ... | F | F | 1 | ... | ... | |
| <i>Curetting uterus</i> abortion ... | F | A | 13 | ... | ... | |
| ... | F | E | 5 | ... | ... | |
| <i>Amputation of cervix Hypertrophy</i> ... | F | A | 1 | ... | ... | |

| Pathological condition on Operation performed. | Sex. | Nation-ality. | Result. | No. of cases. | Notes. |
|---|------|---------------|---------|---------------|--|
| 1. ABDOMINAL OPERATIONS:— | | | | | |
| <i>Liver and bile passages—</i> | | | | | |
| <i>Cholecystectomy-Calculus and Cystitis ...</i> | M | A | C | 1 | |
| <i>Cholecyst-Gastrostomy stenosis of common Bile Duct</i> | M | A | C | 1 | |
| <i>Cholecystectomy stone ...</i> | M | A | C | 1 | |
| <i>Cholecystectomy stone ...</i> | M | E | C | 2 | From ascending cholangitis cholæmia. |
| <i>Liver Abscess ...</i> | M | E | D | 1 | |
| <i>Pancreatic Cyst ...</i> | M | A | C | 2 | Large abscess with almost complete destruction of liver. |
| <i>Pancreatic Cyst ...</i> | M | A | D | 1 | |
| <i>Pancreatic Cyst ...</i> | F | A | C | 1 | |
| 2. GASTRO-INTESTINAL:— | | | | | |
| <i>Gastro jejunosotomy for ulcer obstruction</i> | M | A | C | 3 | |
| <i>Perforated ulcer ...</i> | M | E | D | 1 | Four days old perforation with collapsed septic condition. |
| <i>Perforated ulcer suture and toilet</i> | M | A | D | 1 | Severe peritonitis and toxæmia. |
| <i>Traumatic rupture of small intestine</i> | M | E | C | 1 | |
| <i>Intestinal Obstruction Acute Band</i> | M | A | D | 2 | |
| <i>Intestinal Obstruction Chronic Band</i> | F | E | C | 3 | |
| <i>Intussusception</i> | M | E | C | 1 | |
| <i>Intussusception</i> | M | E | C | 1 | Following resection of colon. |
| <i>Intussusception</i> | M | A | D | 1 | Collapsed on admission, colostomy, death in 5 hours. |
| <i>Carcinoma</i> | M | E | D | 1 | |
| EXPLORATORY LAPAROTOMY:— | | | | | |
| <i>Diagnostic for carcinoma of liver</i> | M | A | R | 1 | |
| <i>Tubercular peritonitis</i> | M | A | R | 2 | |
| <i>Tubercular peritonitis</i> | F | A | R | 1 | |
| <i>Tubercular peritonitis</i> | F | E | R | 1 | |
| <i>Tubercular peritonitis</i> | M | E | R | 2 | |
| PENETRATING WOUNDS:— | | | | | |
| <i>Stab of liver and stomach</i> | M | A | C | 1 | |
| <i>Simple penetration</i> | M | A | C | 2 | |
| SPLENECTOMY:— | | | | | |
| <i>Rupture</i> | M | A | C | 1 | |
| <i>Splenomegaly</i> | F | E | C | 1 | |

| Pathological condition on Operation performed. | Sex. | Nation-ality. | Result. | No. of Cases. | Notes. |
|---|------|---------------|---------|---------------|--------|
| <i>Hernia</i> | M | A | C | 10 | |
| Simple { | M | E | C | 14 | |
| Inguinal { | F | E | C | 1 | |
| Umbilical { | M | A | C | 3 | |
| ... { | M | A | D | 1 | |
| Strangulated Inguinal ... { | M | E | C | 10 | |
| <i>Appendicitis</i> ... { | F | E | C | 13 | |
| Internal { | M | A | C | 5 | |
| Acute with Abscess { | M | E | C | 10 | |
| ... { | F | A | C | 2 | |
| ... { | F | A | C | 4 | |
| <i>Appendisectomy</i> ... { | M | A | C | 2 | |
| ... { | M | E | C | 1 | |
| ... { | M | E | C | 6 | |
| ... { | M | A | C | 1 | |
| ... { | F | A | C | 1 | |
| ... { | M | A | D | 1 | |
| ... { | F | A | D | 1 | |
| ... { | M | E | D | 1 | |
| ... { | M | E | R | 1 | |
| ... { | M | A | D | 1 | |
| ... { | F | A | C | 1 | |
| ... { | F | E | C | 1 | |
| ... { | M | E | C | 1 | |
| ... { | M | A | D | 1 | |
| ... { | M | A | C | 1 | |
| ... { | M | E | C | 3 | |
| ... { | M | E | D | 1 | |
| ... { | M | E | C | 2 | |
| ... { | F | A | C | 1 | |
| ... { | M | A | D | 1 | |
| ... { | M | A | C | 4 | |
| ... { | M | E | C | 1 | |
| ... { | M | A | C | 2 | |
| ... { | M | A | D | 1 | |
| <i>Renal extravasation and septic cellulitis late rupture of kidney</i> ... { | M | A | D | 1 | |

Strangulated some days admitted old and pulseless.

Very large tumour involving pancreas, died on completion of operation, shock.

Anuria old case of prostatectomy some years previously with chronic interstitial nephritis.

Secondary hæmorrhage.

| Pathological condition on Operation performed. | Sex. | Nation-ality. | Result. | No. of Case. | Notes. |
|---|------|---------------|---------|--------------|----------------------------|
| <i>Torsion of testicle</i> ... | M | E | C | 1 | |
| <i>Orchidectomy</i> ... | M | E | C | 1 | |
| ... Sarcoma | M | E | C | 2 | |
| ... Tubercular epididymitis | M | A | C | 12 | |
| <i>Hydrocele Radical Operation</i> ... | M | E | C | 2 | |
| ... Recto-urethral fistula | M | A | R | 1 | |
| ... Varicocele | M | E | C | 6 | |
| <i>Lymphatic glands</i> ... | M | E | C | 1 | |
| ... Excision neck | M | A | C | 2 | |
| ... " groin | M | E | C | 1 | |
| ... Submaxillary Chondro-adenoma | M | A | C | 1 | |
| <i>Thyroid HEMI-Thyroidectomy</i> (Exophthalmic goitre) | F | E | C | 1 | |
| <i>Bronchial Cyst</i> excised | F | E | D | 1 | On table anæsthetic-shock. |
| <i>Skull Trephining</i> compound fracture | M | A | C | 1 | |
| <i>Nerves</i> Stretching (sciatic) | M | A | C | 7 | |
| Injection of alcohol for neuralgia fifth nerve | M | E | C | 1 | |
| <i>Thoracic empyema</i> ... | M | E | C | 2 | |
| <i>Halstead's radical breast operation</i> | F | E | C | 2 | |
| ... carcinoma | F | E | C | 1 | |
| <i>Amputations through</i> | M | A | C | 2 | |
| ... arm | M | A | C | 1 | |
| ... fore-arm | M | A | C | 1 | |
| ... leg | M | A | C | 1 | |
| ... syme | M | A | C | 1 | |
| <i>Aneurysms</i> , common Femoral, ligature of external iliac | M | A | C | 1 | |
| ... Brachial | F | A | C | 1 | Toxæmia. |
| <i>Tracheotomy</i> (diphtheria) | M | A | D | 1 | |
| <i>Mastoid</i> (<i>Heath's operation</i>) | M | A | C | 4 | |
| <i>Fixation of fracture</i> Humerus wired | M | E | C | 1 | |
| <i>Sequestromy of leg</i> | M | A | C | 1 | |
| <i>Septic Thrombus traumatic</i> ; Internal jugular vein opened | M | E | C | 1 | |
| <i>Dentigerous Cyst</i> ... | M | E | D | 1 | Streptococcal Septicæmia. |
| ... | M | A | C | 1 | |

SURGERY—GENERAL HOSPITAL 1919-1920, ANNUAL REPORT BY MR. C. J. SMITH, Senior Surgeon.

| Pathological condition on Operation performed. | Sex. | Nation-ality. | Result. | No. of case. | Notes. |
|--|------|---------------|---------|--------------|--------|
| <i>Varicose Veins, Extraction (Mayo)</i> | M | E | C | 2 | |
| <i>Extraction of foreign bodies leg</i> | M | E | C | 1 | |
| <i>Hallux Valgus</i> | M | E | C | 1 | |
| <i>Torticollis</i> Plastic lengthening structures of neck | M | A | C | 1 | |
| <i>Meniscotomy, knee, internal</i> | M | E | C | 1 | |
| <i>Tenotomy (achilles)</i> | F | E | C | 1 | |
| <i>Excision of upper jaw (sarcoma)</i> | M | A | D | 1 | |
| <i>Hæmorrhoids</i> | M | E | C | 12 | |
| <i>Spur on os calcis excised</i> | F | A | C | 5 | |
| <i>Osteomyelitis of Tibia</i> | M | A | C | 1 | |
| <i>Lipoma of Back</i> | M | E | C | 1 | |
| <i>Gun shot wounds through hip joint excision of 1/4 head of femur</i> | F | A | C | 1 | |
| <i>Penetrating wounds of joints</i> | M | A | C | 1 | |
| <i>Compound dislocation thumb</i> | M | E | C | 1 | |
| <i>Cleft palate complete repair</i> | M | E | C | 4 | |
| <i>Hare lip cheiloplasty</i> | M | A | C | 2 | |
| Major | ... | ... | ... | 324 | |
| Minor | ... | ... | ... | 238 | |
| (Throat, nose and ear)... | ... | ... | ... | 17 | |
| Eyes | ... | ... | ... | 14 | |
| Total | ... | ... | ... | 593 | |
| Total deaths | ... | ... | ... | 26 | |

MINOR OPERATIONS PERFORMED IN GENERAL THEATRE.

| | |
|--|-----|
| <i>Tonsil and adenoid excisions</i> | 31 |
| Cystoscopy diagnostic | 40 |
| Pelvic injection of Ag. NO ₃ | 17 |
| Incision of abscesses and Cellulitis | 25 |
| Diagnostic lumbar puncture | 2 |
| Extraction of foreign bodies | 2 |
| Fistula in Ano | 10 |
| Fissure in Ano | 1 |
| Circumcisions | 13 |
| Amputations of fingers | 5 |
| Dental extractions | 3 |
| Excision of ganglia | 1 |
| Sigmoidoscopy | 13 |
| Urethroscopy | 1 |
| Skin grafting | 3 |
| Subungual exostosis | 1 |
| Setting of fractures | 2 |
| Fibroma of back excised | 1 |
| Pelvic examinations under anæsthetic | 13 |
| Hammer toes | 2 |
| Cheloids excised | 1 |
| Stricture of urethra dilated | 14 |
| Reduction of dislocations | 3 |
| Tendons sutured | 4 |
| Cysts Bartholin excised | 1 |
| Exploration and treatment of sinuses | 5 |
| Suture of wounds | 3 |
| Rectal stricture dilated | 4 |
| Fractures set | 3 |
| Excision of uvula | 1 |
| Sequestrotomy | 2 |
| Toilet of compound fractures | 1 |
| Total | 228 |

EYE OPERATIONS—(Dr. BURNE).

| | |
|---------------------------------|----|
| Enucleations | 5 |
| Cataract extractions | 2 |
| Iridectomy | 1 |
| Posterior sclerotomy | 1 |
| Corneal ulcer cauterized | 2 |
| Lachrymal sac excision | 1 |
| Rodent ulcer of lid | 1 |
| Pterygium excised | 1 |
| Total | 14 |

THROAT, NOSE AND EAR OPERATIONS.

| | |
|---|----|
| Turbinectomy | 5 |
| Radical Antrum operation | 3 |
| Ranula excised | 1 |
| Cauterization of turbinates | 1 |
| Exploration and lavage of antrum | 2 |
| Polypi removed | 2 |
| Bollingers-Septum | 2 |
| Extraction of foreign body from middle ear | 1 |
| Total | 17 |

Maternity Wards.

There were 406 admissions for the year as compared with 333 for the previous year. There were 359 confinements. The nationalities of the cases were as follows:—

| | | | | | |
|---------------|-----|-----|-----|------------------|------------|
| Europeans ... | ... | ... | ... | ... | 69 |
| Eurasians ... | ... | ... | ... | ... | 13 |
| Malays ... | ... | ... | ... | ... | 4 |
| Chinese ... | ... | ... | ... | ... | 219 |
| Indians ... | ... | ... | ... | ... | 24 |
| Sikhs ... | ... | ... | ... | ... | 15 |
| Javanese ... | ... | ... | ... | ... | 10 |
| Jews ... | ... | ... | ... | ... | 5 |
| | | | | Total ... | 359 |

The average weight of the European and Eurasian male infants was 7 lbs. 12 ozs. and of the females 7 lbs. 9 ozs., the sex of the children born consisted of 212 males and 148 females: of the 359 confinements, 121 were abnormal: this is to be explained by the fact that midwives have been trained at the hospital for some years and as the number of qualified midwives in private practice increases so the number of normal cases admitted to hospital falls. The percentage of abnormal cases treated is highest in the Europeans and lowest in the Chinese. The more serious cases included Craniotomy 4, Transverse presentations 4, Eclampsia 1, Placenta prævia 6, Post-partum hæmorrhage 6, Forceps were applied in 62 cases.

There were 12 deaths due to Hæmorrhage, Post-partum 3, Placenta Prævia 1, Cerebral Malaria 2, Septicæmia 2, Syphilis 1, Acute Diarrhœa 1, Morbis Cordes 1, Exhaustion in a debilitated individual suffering from Ankylostomiasis 1. These deaths occurred chiefly amongst the Chinese, there were none amongst the Europeans. It should be borne in mind that many of the cases are admitted in a very grave condition, the result of excessive handling by ignorant friends and delay in seeking aid at the hospital and this accounts for several of the deaths.

There were 40 premature and still births.

During the year 9 pupil midwives entered for the usual six months' training and of these 7 succeeded in obtaining their certificates.

FREE MATERNITY HOSPITAL, VICTORIA STREET.

During the year under report 232 women were admitted, of whom:—

| | | |
|-----|------|-----------|
| 2 | were | Europeans |
| 22 | „ | Eurasians |
| 34 | „ | Tamils |
| 15 | „ | Japanese |
| 2 | „ | Jewesses |
| 2 | „ | Malays |
| 155 | „ | Chinese |

Last year (1918) the total number was 221.

There was one death (adult) due to Ankylostomiasis; Still-born children 10; Infantile deaths 3.

The complicated cases were 42 in number:—1 Transverse, 1 Decapitation, 1 Twins, 4 Breech, 6 Uterine Inertia, 3 Hydramnios, 5 Adherent Placenta (with P. P. H.), 6 P. P. H., 1 Placenta Prævia, 8 Miscarriages, 1 Malaria, 1 Ankylostomiasis, 1 Neuritis, 1 Gastritis, 1 Dysentery, 1 Adherent Placenta.

The average weights of infants were:—

| | | | | |
|-----------|-----|-----|-----|------------|
| Europeans | ... | ... | ... | 9 lbs. |
| Eurasians | ... | ... | ... | 7 " |
| Tamils | ... | ... | ... | 6 " 8 ozs. |
| Japanese | ... | ... | ... | 7 " |
| Jewesses | ... | ... | ... | 6 " |
| Malays | ... | ... | ... | 6 " 8 ozs. |
| Chinese | ... | ... | ... | 7 " |

PRISON HOSPITAL.

REPORT BY DR. T. MURRAY ROBERTSON, M.D., *Acting Police Surgeon.*

1. The health of the Prison has been satisfactory.
2. The sanitary condition of the Prison has been further improved by the extension of the Flush Sewerage System to the hospital and Civil Prison.
3. *Beri-beri*—There were no cases.
4. *Enteric Fever*.—No case occurred.
5. *Influenza*.—A recurrence of this disease in a mild form accounted for 13 admissions to hospital with no deaths.
6. *Scurvy*.—Five cases were treated. The history given by them was that they had not eaten their ration of vegetable for some time, because the vegetable was not to their liking. An extra ration and a more varied sort of vegetable has been supplied to all prisoners and no fresh case occurred.
7. *Dysentery*.—There were 28 admissions with 9 deaths, against 47 in 1918 and 74 in 1917.
8. *Tuberculosis*.—There were 11 cases with 8 deaths.
9. *Admissions to hospital*.—There were 582 and the average daily sick 30, against 707 and 38 in the previous year.
10. *Europeans and Eurasians*.—None were admitted to hospital.
11. The following table shews admissions and deaths, etc., of different classes of prisoners:—

| | | <i>Criminal.</i> | <i>Civil.</i> | <i>Vagrants.</i> |
|--|-----|------------------|---------------|------------------|
| Total population | ... | 3,216 | 4,054 | 391 |
| Average daily number | ... | 673 | 107 | 39 |
| Number admitted to hospital | ... | 474 | 11 | 97 |
| Number died | ... | 21 | 1 | 8 |
| Average daily sick | ... | 26.6 | 0.4 | 3.8 |
| Percentage of deaths to total population | ... | 0.6 | 0.2 | 2.4 |

12. *Deaths*.—There were 30 out of a total population of 7,661 giving a death-rate of 3 per mille.

13. *Causes of death*.—There were 9 deaths from Dysentery, Tuberculosis 8, Heart Diseases 5, Pneumonia 3, Nephritis 3, Chronic Malaria 1, Rupture of Spleen 1.

14. *Grades of those who died*.—Long sentence 11, short sentence 7, Revenue Grade 3, Civil 1 and Vagrants 8. The vagrants were all in very bad health when admitted and died soon after their admission to Prison.

15. *Suicide*.—Four Chinese prisoners committed suicide by hanging in their cells.

16. *Execution by hanging.*—There were five —2 Tamils and 3 Chinese.
 17. *Transfer to Lunatic Asylum.*—3 Criminal prisoners and 4 Vagrants.
 18. The staff remained the same as in 1918.

TAN TOCK SENG'S HOSPITAL, SINGAPORE.

REPORT BY R. D. FITZGERALD, M.B., B.Ch., B.A.O., D.T.M. & H.
 (CAMB.), *Medical Officer.*

1. *Work done:*—

| | | | |
|---------------------------------|-----|-----|--------|
| Remained on 31st December, 1918 | ... | ... | 645 |
| Admitted during 1919 | ... | ... | 10,238 |
| Total | | | 10,883 |
| | | | |
| Discharged | ... | ... | 8,945 |
| Died | ... | ... | 1,346 |
| Remained on 31st December, 1919 | ... | ... | 592 |
| Total | | | 10,883 |

2. The average daily sick was 641.65 as compared with 657.00 in 1918.
 3. The percentage of deaths to total treated during the year was 12.36.
 4. There were 1,346 deaths during the year. Of these the number dying within 24 hours of admission was 70. Deducting these the deaths were 1,276.
 5. The average daily stay in hospital of those discharged was 12.86 days, of those dying 65.43 days and of those remaining 246.30 days. The corresponding figures for the last year were of those discharged 16.48 days, of those died 11.95 days, and of those remaining 168.08 days.
 6. *Malaria.*—Two thousand two hundred and thirty-nine cases of Malaria were treated during the year. The number of cases remaining in hospital at the end of the year was 66. There were 136 deaths giving a mortality return of 6.07 per cent.

| <i>Types of Malaria.</i> | <i>Total cases treated.</i> | <i>Deaths.</i> |
|--------------------------|-----------------------------|----------------|
| Benign Tertian | 208 | 3 |
| Malignant Tertian | 706 | 98 |
| Quartan | 57 | 2 |
| Mixed | 22 | 3 |
| Chronic | 335 | 20 |
| Unclassified | 911 | 10 |
| Total | 2,239 | 136 |

Systematic blood examinations were carried out in all cases. The results were as follows:—

| | | | |
|-------------------|-----|-----|-------|
| Malignant Tertian | ... | ... | 1,031 |
| Benign Tertian | ... | ... | 395 |
| Quartan | ... | ... | 121 |
| Mixed | ... | ... | 118 |
| Negative | ... | ... | 2,612 |
| Total | | | 4,277 |

7. *Dysentery*.—There were 620 cases of Dysentery treated during the year. Of these 256 cases died shewing a death-rate of 41·29 per cent.

8. *Beri-beri*.—Seven hundred cases of Beri-beri have been under treatment during the year. Thirty-three cases remain in hospital at the end of the year. There were 78 deaths giving a mortality of 11·14 per cent. One hundred and ninety-three cases of the chronic type were transferred to Pasir Panjang Hospital. The number of cases admitted during the year was 650.

The following table shows their nationality:—

| <i>Nationality.</i> | <i>Cases.</i> | <i>Deaths.</i> |
|---------------------|---------------|----------------|
| Chinese | 550 | 70 |
| Malays | 15 | 3 |
| Indians | 13 | 3 |
| Japanese | 61 | 2 |
| Others | 11 | ... |
| Total | 650 | 78 |

9. *Enteric Fever*.—Sixty-two cases of Enteric Fever were treated during the year. There were 31 deaths shewing a death-rate of 50 per cent. Last year the mortality was 40·36 per cent.

10. *The Venereal Diseases* were as follows:—

| | <i>Cases.</i> | <i>Deaths.</i> |
|-------------------|---------------|----------------|
| Syphilis, Primary | 77 | ... |
| „ Secondary | 895 | 7 |
| „ Tertiary | 49 | 1 |
| „ Arthritis | 31 | 1 |
| „ Gonorrhœa | 178 | ... |
| Total | 1,230 | 9 |

11. *Helminthiasis*.—One hundred and sixty-three cases of Ankylostomiasis were treated during the year. Seven cases remained in hospital at the end of the year. There were 23 deaths giving a mortality of 14·11 per cent. Two thousand six hundred and nine stools were examined during the year with the following results:—

| | |
|--|-------|
| Ankylostomiasis ova | 582 |
| Round-worm ova | 257 |
| Whip-worm ova | 130 |
| Round and Whip-worm ova | 40 |
| Ankylostomiasis and Round-worm ova | 76 |
| Ankylostomiasis and Whip-worm ova | 76 |
| Ankylostomiasis, Whip and Round-worm ova | 20 |
| Negative | 1,428 |
| Total | 2,609 |

12. *Tuberculosis, General and Pulmonary*.—Out of 570 cases of Tuberculosis treated during the year there were 550 Pulmonary Tuberculosis and 20 General Tuberculosis. Two hundred and seventy cases died giving a death-rate of 49·09 per cent.

13. *Ulcers*.—One thousand two hundred and six cases of Ulcers were treated during the year, 90 cases remain in hospital.

14. *Plague*.—There was one fatal case of *Plague*.

15. The surgical work was as follows:—

| | | | | |
|---------------------------|-----|-----|-----|-------|
| Operation performed—major | ... | ... | ... | 175 |
| Operation performed—minor | ... | ... | ... | 1,323 |
| | | | | Total |
| | | | | 1,498 |

16. One thousand five hundred and sixty-two intravenous injections of arseno-benzol were administered without a single case exhibiting any untoward effect.

17. *Medico-Legal*.—Forty-seven dead bodies were sent by the Coroner for post-mortem examination. Five hundred and thirteen cases were sent by the Police for treatment.

18. *Europeans*:—

| | | | |
|--|-----|-----|----|
| Remaining in hospital at the end of 1918 | ... | ... | 12 |
| Admitted during 1919 | ... | ... | 79 |
| Deaths during 1919 | ... | ... | 3 |

19. *Japanese*.—The number of patients is 401. There were 19 deaths among them giving a death-rate of 4.73 per cent. The mortality for the previous year was 2.93 per cent.

20. The Principal Civil Medical Officer visited and inspected the Hospital, Male and Female Leper Camps on 14 occasions.

The Committee of Tan Tock Seng's Hospital made 12 visits of inspection.

LUNATIC ASYLUM.

REPORT BY DR. H. J. GIBBS, M.R.C.S., L.R.C.P., *Medical Superintendent*.

1. There remained on 31st December, 1918, 309 males and 66 females. One hundred and seventy-five males and forty-one females were admitted in 1919 giving a total treated of five hundred and ninety-one patients.

2. The admissions fall short of the previous year by one hundred and one. Of the admissions 8 males and 4 females had previously been under treatment in this asylum.

3. Of the total treated 82 males and 17 females were discharged recovered;—15 males and 1 female relieved;—40 males and 2 females not improved;—10 males absconded and 72 males and 11 females died.

4. There remained on 31st December, 1919, 265 males and 76 females.

5. The average daily numbers resident were 292 males and 67 females.

6. The maximum and minimum numbers were 388 and 326 respectively.

7. The nationalities of the admissions were:—

| | <u>Males.</u> | <u>Females.</u> |
|-------------------------|---------------|-----------------|
| British | 5 | 1 |
| Other Europeans | ... | 1 |
| Eurasians | 2 | 2 |
| Japanese | 2 | 1 |
| Chinese | 124 | 24 |
| Malays and allied races | 16 | 6 |
| Tamils | 19 | 5 |
| Other Asiatics | 7 | 1 |
| | <u>175</u> | <u>41</u> |
| Total | ... | ... |

8. The physical condition of the admissions is shewn as:—

| | Males. | Females. |
|------------------|--------|----------|
| Good | 47 | 5 |
| Fair | 67 | 12 |
| Impaired | 43 | 9 |
| Greatly Impaired | 18 | 5 |

9. Ten of the admissions died within a month of their admissions.

10. As to the causes assigned for the mental breakdown in the admissions, syphilis heads the list with 28, alcoholic intemperance accounts for 17. Eight males and 2 females were general paralytics, all were Asiatics—Chinese.

11. *Discharges.*—Of the 42 shewn as not improved 36 males were transferred to Tanjong Rambutan. The recovery rate for the year was 41'20. It is the best since 1909 and compares favourably with the recovery rate of English Asylums.

12. *Criminal Population.*—There remained on 31st December, 1918, 17 lunatic criminals and 19 criminal lunatics. During 1919, ten lunatic criminals and 7 criminal lunatics were admitted. The sentences of 4 lunatic criminals expired; one recovered and was returned to the Criminal Prison to complete his sentence and five died.

Of the criminal lunatics, one, a European, on the recommendation of the Asylum Visitors, had his name removed from the list by His Excellency the Governor, and one died.

There remained on 31st December, 1919, 17 lunatic criminals and 24 criminal lunatics. One of the former and 2 of the latter are females.

13. The death-rate on the average daily number resident was 23'12; males 24'66, females 16'42.

Dysentery, tubercle and cholera accounted for 25, 11, and 13 of the deaths respectively.

14. Cholera occurred towards the end of the year. It was introduced from the Tan Tock Seng Hospital by an insane patient who had been in residence there for 12 days. He was admitted at 4 P.M. on the 15th September and early on the afternoon of the 16th was seriously ill with cholera. He died at 10 A.M. on the 17th. The second case occurred on the 17th in a patient who had been in residence since the 30th May, 1917. The third case was a Chinese patient who became ill in the early hours of the 18th September, and the fourth occurred at 10 A.M. the same day.

15. Seeing that it was impossible in the crowded condition of the Asylum to adequately segregate the sick I asked that the occupants of the lower levels be transferred to St. John's Island as early as possible. This was done in the forenoon of the 20th September, 140 patients including 2 cases of Cholera and 6 of Dysentery with Dresser WORTHINGTON and the majority of the attendants were towed across to St. John's in two lighters. On arrival at St. John's another case of cholera was found amongst the apparently healthy contacts.

During their residence on St. John's 14 other cases of cholera occurred, one of the victims being an attendant named LEE SENG who succumbed to the disease after a short illness.

Of the total treated, 19, fourteen died. In addition to cholera 10 of the patients were attacked with a very virulent form of bacillary dysentery. Clinically they presented signs of Asiatic cholera. Of the 10 thus attacked 5 died, one dying within 24 hours.

16. The surviving contacts and the attendants returned to Singapore on the 20th October. During their absence the whole of the Asylum was disinfected with formalin, the walls scraped and limewashed internally. No case of cholera occurred amongst the patients occupying the higher levels of the Asylum after the 140 were transferred to St. John's.

17. *Casualties*.—A hundred and two of these were recorded.

By themselves—seven—all trivial.

By other patients—forty-five—44 were trivial. One was fatal from Peritonitis following ruptured intestine following a kick on the abdomen.

By accident—fifty—46 were trivial. The other 4 were fractures of clavicle, ribs, thigh and leg. The case of fractured ribs proved fatal.

18. A Coroner's inquest was held in every death occurring in the Asylum and on St. John's Island.

19. I am glad to be again able to report no deaths from suicide.

20. *Industries*.—Five thousand seven hundred and sixty yards of cotton cloth were woven by the male patients from yarn purchased, and from which, eight hundred and ninety-seven bajus, 922 pairs of trousers for native males, 131 jackets and 140 pairs of trousers for European male patients, 220 bajus and 68 sarongs for women, 20 pairs of bathing drawers, 45 pillow cases, 48 dusters, 4 kimonos, 18 chemises, 10 night gowns and 10 combination suits were made by the female patients.

21. In addition, from canvas purchased, 97 strong rugs and 15 combination suits were made by the male patients.

22. *Kitchen Garden*.—Which was started towards the close of 1917 has continued to produce prolifically. From three acres of ground the Asylum and General Hospital patients received 25,743 pounds of various native vegetables and the native prisoners received 1,000 pounds. This at contract rates, has saved the Government \$772.29, less cost of upkeep, viz., \$66. In addition to the above quantity the staff, patients and attendants of the Asylum and Beri-beri Hospital received 5,872 pounds of vegetables, 5,460 bananas, 45 giant papayas and 519 pounds of sugar-cane.

23. *Staff and Attendants*.—The Matron and European Attendant, Mr. JAMES KERR, went home on long leave in September.

24. The average maintenance cost per patient per mensem was \$11.33.

25. A new European Cottage is in process of construction and will meet a badly felt want at Sepoy Lines.

26. A new Asylum is urgently needed.

TABLE I.

LUNATIC ASYLUM.

Table showing the Admissions, Discharges and Deaths during the Year 1919.

| — | Male. | Female. | Total. | Male. | Female. | Total. |
|---|-------|---------|--------|-------|---------|--------|
| In the Asylum on 1st January, 1919 | ... | ... | ... | 309 | 66 | 375 |
| Cases admitted :— | | | | | | |
| First Admissions | ... | ... | ... | 167 | 37 | 204 |
| Not First Admissions | ... | ... | ... | 8 | 4 | 12 |
| Total cases under care during the year | ... | ... | ... | 484 | 107 | 591 |
| Cases Discharged :— | | | | | | |
| Recovered | 82 | 17 | 99 | ... | ... | ... |
| Relieved | 15 | 1 | 16 | ... | ... | ... |
| Not Relieved | 40 | 2 | 42 | ... | ... | ... |
| Absconded | 10 | ... | 10 | ... | ... | ... |
| Died | 72 | 11 | 83 | ... | ... | ... |
| Total cases discharged and died during the year | ... | ... | ... | 219 | 31 | 250 |
| Remaining in the Asylum on 31st December, 1919 | ... | ... | ... | 265 | 76 | 341 |
| Average number resident during the year | ... | ... | ... | 292 | 67 | 359 |

TABLE II.
LUNATIC ASYLUM.

Table showing the Admissions, Re-admissions, Discharges and Deaths from 31st December, 1888, to 31st December, 1919.

| — | Male. | Female. | Total. | Male. | Female. | Total. |
|---|-------|---------|--------|-------|---------|--------|
| Remaining on the 31st December, 1888 | ... | ... | ... | 176 | 32 | 208 |
| Persons admitted during the period | ... | ... | ... | 5,170 | 925 | 6,095 |
| Re-admissions | ... | ... | ... | 527 | 124 | 651 |
| Total cases treated | ... | ... | ... | 5,873 | 1,081 | 6,954 |
| Discharged Cases :— | | | | | | |
| Recovered | 2,299 | 359 | 2,658 | ... | ... | ... |
| Relieved | 496 | 132 | 628 | ... | ... | ... |
| Not improved | 503 | 138 | 641 | ... | ... | ... |
| Absconded | 196 | 24 | 220 | ... | ... | ... |
| Died | 2,114 | 352 | 2,466 | ... | ... | ... |
| Total cases discharged and died since 31st December, 1888 | ... | ... | ... | 5,608 | 1,005 | 6,613 |
| Remaining in the Asylum on 31st December, 1919 | ... | ... | ... | 265 | 76 | 341 |
| | | | | | | 26 |

TABLE IV.

LUNATIC ASYLUM.

Table showing the History of the Annual Admissions since 1889, with the Discharges and Deaths, and the Numbers of each Year Remaining on 31st December of the Year reported on.

| YEAR. | Admitted. | | | | Of each Year's Admissions, Discharged and Died in 1919. | | | | | | | | Total Discharged and Died of each Year's Admissions to 31st December, 1919. | | | | | | | | Remaining of each Year's Admissions 31st December, 1919. | | | |
|---------------|------------|---------|----------------|---------|---|---------|---------------|---------|------------|---------|-------|---------|---|---------|-----------|---------|---------------|---------|------------|---------|--|---------|-------|---------|
| | New Cases. | | Re-admissions. | | Recovered. | | Not Improved. | | Absconded. | | Died. | | Recovered. | | Relieved. | | Not Improved. | | Absconded. | | Died. | | Male. | Female. |
| | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. |
| Prior to 1889 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1889 | 197 | 26 | 4 | 254 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1890 | 137 | 25 | 5 | 192 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1891 | 144 | 26 | 3 | 187 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1892 | 170 | 27 | 4 | 217 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1893 | 157 | 24 | 5 | 198 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1894 | 146 | 30 | 7 | 207 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1895 | 186 | 21 | 6 | 230 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1896 | 98 | 21 | 5 | 148 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1897 | 129 | 21 | 8 | 161 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1898 | 118 | 30 | 2 | 162 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1899 | 143 | 29 | 4 | 187 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1900 | 137 | 21 | 7 | 175 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1901 | 129 | 14 | 2 | 159 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1902 | 176 | 27 | 3 | 221 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1903 | 201 | 24 | 7 | 254 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1904 | 177 | 25 | 2 | 228 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1905 | 176 | 30 | 3 | 231 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1906 | 148 | 29 | 5 | 197 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1907 | 167 | 34 | 8 | 222 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1908 | 154 | 43 | 2 | 220 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1909 | 159 | 40 | 3 | 228 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1910 | 177 | 29 | 1 | 220 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1911 | 192 | 30 | 3 | 235 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1912 | 189 | 42 | 6 | 257 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1913 | 180 | 28 | 8 | 235 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1914 | 189 | 38 | 2 | 235 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1915 | 207 | 38 | 16 | 268 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1916 | 235 | 48 | 8 | 317 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1917 | 167 | 37 | 4 | 216 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1918 | 167 | 37 | 4 | 216 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 1919 | 167 | 37 | 4 | 216 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

TABLE V.—Continued.
LUNATIC ASYLUM.
Showing the Causes of Deaths during the Year 1919, together with the Ages at Death.

| CAUSES OF DEATH. | Under 15 years. | | 15 and under 20 years. | | 20 and under 25 years. | | 25 and under 30 years. | | 30 and under 35 years. | | 35 and under 40 years. | | 40 and under 45 years. | | 45 and under 50 years. | | 50 and under 55 years. | | 55 and under 60 years. | | 60 and under 65 years. | | 65 and under 70 years. | | 70 and under 75 years. | | 75 and under 80 years. | | TOTAL. | | | | |
|--------------------------------------|-----------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|--------|---------|----|---|--|
| | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | | | |
| <i>Brought forward</i> ... | ... | ... | 1 | ... | 5 | ... | 9 | 1 | 10 | 14 | 1 | 15 | 10 | 3 | 13 | 13 | 4 | 5 | 9 | 2 | 2 | 2 | 1 | 3 | ... | ... | ... | ... | 62 | 11 | 73 | | |
| DISEASES OF THE RESPIRATORY SYSTEM.— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ulceration of the larynx ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | |
| Broncho-pneumonia ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | | |
| DISEASES OF THE DIGESTIVE SYSTEM.— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cancerum Oris ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | | |
| Gastro-Enteritis ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | |
| DISEASES OF THE URINARY SYSTEM.— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chronic Bright's Disease ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | |
| DISEASES OF THE CELLULAR TISSUE.— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cellulitis ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | 2 | 2 | |
| INJURIES.— | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fracture of Ribs ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | |
| Rupture of Intestines ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | |
| TOTAL ... | ... | ... | 1 | 6 | 6 | 10 | 1 | 11 | 15 | 15 | 16 | 12 | 3 | 15 | 14 | 14 | 5 | 5 | 10 | 2 | 5 | 2 | 1 | 3 | ... | ... | ... | 72 | 11 | 83 | 83 | | |

TABLE VI.

LUNATIC ASYLUM.

Table showing the Length of Residence of those Discharged, Recovered and of those who Died, during the Year 1919.

| Length of Residence. | Recovered. | | | Died. | | |
|---------------------------------------|------------|---------|--------|-------|---------|--------|
| | Male. | Female. | Total. | Male. | Female. | Total. |
| Under one month | 4 | 1 | 5 | 6 | 4 | 10 |
| From one to three months | 13 | 2 | 15 | 13 | 3 | 16 |
| " three to six months | 20 | 7 | 27 | 16 | 2 | 18 |
| " six to nine months | 20 | 5 | 25 | 11 | ... | 11 |
| " nine to twelve months | 13 | 1 | 14 | 6 | ... | 6 |
| " one to two years | 10 | ... | 10 | 7 | 1 | 8 |
| " two to three years | 1 | ... | 1 | 4 | ... | 4 |
| " three to five years | 1 | ... | 1 | 6 | ... | 6 |
| " five to seven years | ... | ... | ... | ... | ... | ... |
| " seven to ten years | ... | 1 | 1 | 2 | ... | 2 |
| " ten to fifteen years | ... | ... | ... | 1 | 1 | 2 |
| " fifteen to twenty-five years | ... | ... | ... | ... | ... | ... |
| TOTAL ... | 82 | 17 | 99 | 72 | 11 | 83 |

TABLE X-a.
LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1919.

| CAUSES. | ADMISSIONS. | | | | | | | | | | | |
|--|--|---------|--------|--------------------|---------|--------|-------------------------------------|---------|--------|---------|---------|--------|
| | Number of Instances in which a Cause was Assigned. | | | | | | | | | | | |
| | Admissions:—Male 175. Female 41. Total 216. | | | | | | | | | | | |
| | As Predisposing Cause. | | | As Exciting Cause. | | | As Predisposing or Exciting Cause.* | | | Total † | | |
| | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. |
| <i>Moral.</i> | | | | | | | | | | | | |
| Domestic Troubles (including loss of relatives and friends) | | | 4 | 2 | 6 | | | | 4 | 2 | 6 | |
| Adverse Circumstances (including business anxieties and pecuniary difficulties) | | | | | | | | | | | | |
| Mental Anxiety and Worry and Overwork | | | 1 | | 1 | | | | 1 | | 1 | |
| Religious Excitement | | | | | | | | | | | | |
| Love Affairs (including seduction) | | | | | | | | | | | | |
| Fright and Nervous Shock | | | | | | | | | | | | |
| <i>Physical.</i> | | | | | | | | | | | | |
| Intemperance in Drink | | | 17 | | 17 | | | | 17 | | 17 | |
| Venereal Disease | | | | | | 25 | 3 | 28 | 25 | 3 | 28 | |
| Self-abuse | | | | | | | | | | | | |
| Sunstroke | | | | | | | | | | | | |
| Accident or Injury | | | | | | | | | | | | |
| Pregnancy | | | | 1 | 1 | | | | | 1 | 1 | |
| Parturition and the Puerperal State | | | | | | | | | | | | |
| Uterine and Ovarian Disorders | | | | 3 | 3 | | | | | 3 | 3 | |
| Lactation | | | | | | | | | | | | |
| Puberty | | | 6 | 1 | 7 | | | | 6 | 1 | 7 | |
| Epilepsy | | | | | | 8 | 1 | 9 | 8 | 1 | 9 | |
| Privation and Starvation | | | 3 | | 3 | | | | 3 | | 3 | |
| Heart Disease and Cardiac-Vascular Changes | | | 5 | 1 | 6 | | | | 5 | 1 | 6 | |
| Phthisis | | | 6 | 4 | 10 | | | | 6 | 4 | 10 | |
| Malarial Fever | | | 18 | 2 | 20 | | | | 18 | 2 | 20 | |
| Typhoid Fever | | | 1 | | 1 | | | | 1 | | 1 | |
| Other Bodily Diseases or Disorders | | | 17 | 3 | 20 | | | | 17 | 3 | 20 | |
| Previous Attacks | 16 | 9 | 25 | | | | | | 16 | 9 | 25 | |
| Old Age | 17 | 3 | 20 | | | | | | 17 | 3 | 20 | |
| Morphia Habit (Opium) | | | 4 | | 4 | | | | 4 | | 4 | |
| Hereditary Influences ascertained | 11 | 1 | 12 | | | | | | 11 | 1 | 12 | |
| Congenital Defect | 2 | 2 | 4 | | | | | | 2 | 2 | 4 | |
| Indian Hemp Smoking | | | 1 | | 1 | | | | 1 | | 1 | |
| Unknown | | | | | | | | | 57 | 15 | 72 | |

* Where these could not be distinguished. † Some of the admissions are credited with more than one cause; therefore, the sum of the "known" and "unknown" exceeds that of the admissions.

TABLE X-b.

LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1919.—Continued.

| CAUSES. | DISCHARGES. | | | | | | | | | | | |
|--|--|---------|--------|--------------------|---------|--------|-------------------------------------|---------|--------|---------|---------|--------|
| | Number of Instances in which a Cause was Assigned. | | | | | | | | | | | |
| | Discharges:—Male 146. Female 20. Total 166. | | | | | | | | | | | |
| | As Predisposing Cause. | | | As Exciting Cause. | | | As Predisposing or Exciting Cause.* | | | Total.† | | |
| | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. |
| <i>Moral.</i> | | | | | | | | | | | | |
| Domestic Troubles (including loss of relatives and friends) | ... | ... | ... | 5 | 1 | 6 | ... | ... | ... | 5 | 1 | 6 |
| Adverse Circumstances (including business anxieties and pecuniary difficulties) | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | 1 | ... | 1 |
| Mental Anxiety and Worry and Overwork | ... | ... | ... | 3 | ... | 3 | ... | ... | ... | 3 | ... | 3 |
| Religious Excitement | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Love Affairs (including seduction) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Fright and Nervous Shock | ... | ... | ... | 2 | ... | 2 | ... | ... | ... | 2 | ... | 2 |
| <i>Physical.</i> | | | | | | | | | | | | |
| Intemperance in Drink | ... | ... | ... | 20 | ... | 20 | ... | ... | ... | 20 | ... | 20 |
| Venereal Disease | ... | ... | ... | ... | ... | ... | 24 | 2 | 26 | 24 | 2 | 26 |
| Self-abuse | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sunstroke | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Accident or Injury | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Pregnancy | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | 1 | 1 | 1 |
| Parturition and the Puerperal State | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Uterine and Ovarian Disorders | ... | ... | ... | ... | ... | ... | 2 | 2 | ... | 2 | 2 | 2 |
| Lactation | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Puberty | ... | ... | ... | 5 | ... | 5 | ... | ... | ... | 5 | ... | 5 |
| Epilepsy | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Privation and Starvation | ... | ... | ... | 2 | ... | 2 | ... | ... | ... | 2 | ... | 2 |
| Heart Disease | ... | ... | ... | ... | ... | ... | 5 | 2 | 7 | 5 | 2 | 7 |
| Phthisis | ... | ... | ... | 11 | 1 | 12 | ... | ... | ... | 11 | 1 | 12 |
| Malarial Fever | ... | ... | ... | 28 | 2 | 30 | ... | ... | ... | 28 | 2 | 30 |
| Typhoid Fever | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | 1 | ... | 1 |
| Other Bodily Diseases or Disorders | ... | ... | ... | ... | ... | ... | 17 | 4 | 21 | 17 | 4 | 21 |
| Previous Attacks | 20 | 4 | 24 | ... | ... | ... | ... | ... | ... | 20 | 4 | 24 |
| Old Age | 6 | 3 | 9 | ... | ... | ... | ... | ... | ... | 6 | 3 | 9 |
| Opium | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Hereditary Influences ascertained | 5 | ... | 5 | ... | ... | ... | ... | ... | ... | 5 | ... | 5 |
| Congenital Defect | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | 1 |
| Indian Hemp Smoking | ... | ... | ... | 1 | 0 | 1 | ... | ... | ... | 1 | ... | 1 |
| Unknown | ... | ... | ... | ... | ... | ... | ... | ... | ... | 25 | 3 | 28 |

* Where these could not be distinguished. † Some of the discharges are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the discharges.

TABLE X-c.

LUNATIC ASYLUM.

Table showing the Probable Causes, Apparent or Assigned, of the Disorders in the Admissions, Discharges and Deaths of the Year 1919.—Continued.

| CAUSES. | DEATHS. | | | | | | | | | | | |
|--|--|--------|-------|--------------------|--------|-------|-------------------------------------|--------|-------|----------|--------|-----|
| | Number of Instances in which a Cause was Assigned. | | | | | | | | | | | |
| | Deaths:—Male 72. | | | Female 11. | | | Total 83. | | | | | |
| | As Predisposing Cause. | | | As Exciting Cause. | | | As Predisposing or Exciting Cause.* | | | Total. † | | |
| Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | |
| <i>Moral.</i> | | | | | | | | | | | | |
| Domestic Troubles (including loss of relatives and friends) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Adverse Circumstances (including business anxieties and pecuniary difficulties) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Mental Anxiety and Worry and Overwork | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Religious Excitement | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Love Affairs (including seduction) | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Fright and Nervous Shock | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| <i>Physical.</i> | | | | | | | | | | | | |
| Intemperance in Drink | ... | ... | ... | 2 | ... | 2 | ... | ... | ... | 2 | ... | 2 |
| Veneral Disease | ... | ... | ... | ... | ... | ... | 20 | 2 | 22 | 20 | 2 | 22 |
| Self-abuse | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sunstroke | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Accident or Injury | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Pregnancy | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Parturition and the Puerperal State | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Uterine and Ovarian Disorders | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 | 1 | ... |
| Lactation | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Puberty | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | 1 | 1 | ... |
| Epilepsy | ... | ... | ... | ... | ... | ... | 2 | 2 | 2 | 2 | 2 | 2 |
| Privation and Starvation | ... | ... | ... | 2 | 2 | ... | ... | ... | ... | 2 | 2 | 2 |
| Heart Disease and Cardio-Vascular Changes | ... | ... | ... | 5 | 5 | ... | ... | ... | ... | 5 | 5 | 5 |
| Phthisis | ... | ... | ... | 11 | 3 | 14 | ... | ... | ... | 11 | 3 | 14 |
| Malarial Fever | ... | ... | ... | 4 | 4 | ... | ... | ... | ... | 4 | 4 | 4 |
| Typhoid Fever | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Other Bodily Diseases or Disorders | ... | ... | ... | 1 | 2 | 3 | ... | ... | ... | 1 | 2 | 3 |
| Previous Attacks | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Old Age | 7 | ... | 7 | ... | ... | ... | ... | ... | ... | 7 | ... | 7 |
| Opium | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Hereditary Influences ascertained | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... | 1 |
| Congenital Defect | 3 | ... | 3 | ... | ... | ... | ... | ... | ... | 3 | ... | 3 |
| Indian Hemp Smoking | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Unknown | ... | ... | ... | ... | ... | ... | ... | ... | 22 | ... | 22 | 22 |

* Where these could not be distinguished. † Some of the deaths are credited with more than one cause; therefore, the sum of the "known" and "unknown" causes exceeds that of the deaths.

TABLE XI.

LUNATIC ASYLUM.

Showing the Form of Mental Disorders on Admissions and Deaths of the Year 1919, and the Form of Mental Disorder of the Inmates on 31st December, 1919.

| FORM OF MENTAL DISORDER. | Admissions. | | | Recoveries. | | | Deaths. | | | Remaining in Asylum. | | |
|--|-------------|---------|--------|-------------|---------|--------|---------|---------|--------|----------------------|---------|--------|
| | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. |
| Congenital or Infantile Deficiency with Epilepsy | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Do. Do. without Epilepsy | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Epilepsy acquired | 3 | 2 | 4 | ... | ... | ... | 3 | 1 | 3 | 3 | 1 | 4 |
| General Paralysis of Insane | 3 | ... | 3 | ... | ... | ... | 1 | ... | 1 | 10 | 3 | 15 |
| Mania, Acute | 8 | 2 | 10 | ... | ... | ... | 11 | 3 | 14 | 5 | 2 | 12 |
| Do. Acute, Delirious | 130 | 26 | 146 | 69 | 13 | 82 | 40 | 3 | 43 | 66 | 14 | 80 |
| Do. Chronic | 1 | 4 | 5 | ... | ... | ... | 1 | 4 | 5 | ... | ... | ... |
| Do. Recurrent | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | 18 | 7 | 25 |
| Do. A Potu | ... | ... | ... | 6 | 1 | 7 | ... | ... | ... | 3 | 4 | 7 |
| Do. Puerperal | 9 | ... | 9 | ... | ... | ... | 2 | ... | 2 | 2 | ... | 2 |
| Do. Senile | 7 | 1 | 8 | 1 | 1 | 2 | ... | ... | ... | ... | ... | ... |
| Melancholia, Acute | 12 | 3 | 15 | 4 | 2 | 6 | 8 | 1 | 9 | 4 | 2 | 6 |
| Do. Chronic | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | 1 | 6 |
| Do. Recurrent | ... | ... | ... | ... | ... | ... | ... | ... | ... | 6 | 3 | 9 |
| Do. A Potu | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Do. Puerperal | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Do. Senile | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Delusional Insanity... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Dementia, Primary | 5 | ... | 5 | ... | ... | ... | ... | ... | ... | 12 | 1 | 13 |
| Do. Secondary | 1 | 1 | 2 | 2 | ... | 2 | 2 | ... | 2 | 5 | 3 | 8 |
| Do. Senile | 1 | 1 | 2 | ... | ... | ... | 1 | ... | 1 | 101 | 27 | 128 |
| Do. A Potu | 2 | 1 | 3 | ... | ... | ... | 1 | ... | 1 | 6 | 1 | 7 |
| Do. Organic... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Not Insane on Admission | 3 | ... | 3 | ... | ... | ... | 2 | ... | 2 | 4 | 3 | 7 |
| Delirium from Fever | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 2 | 5 |
| TOTAL | 175 | 41 | 216 | 82 | 17 | 99 | 72 | 11 | 83 | 265 | 76 | 341 |

TABLE XVII.

LUNATIC ASYLUM.

Showing Occupation of Admissions.

| Occupation. | Male. | Female. | Total. | Occupation. | Male. | Female. | Total. |
|----------------------------|-------|---------|--------|----------------------------|-------|---------|--------|
| | | | | <i>Brought forward ...</i> | 74 | 7 | 81 |
| Amah ... | ... | 1 | 1 | Ice-cream selle ... | 1 | ... | 1 |
| Architect ... | 1 | ... | 1 | Interpreter ... | 1 | ... | 1 |
| Blacksmith ... | 1 | ... | 1 | Lamplighter ... | 1 | ... | 1 |
| Boiler-maker ... | 2 | ... | 2 | Lime burner ... | 1 | ... | 1 |
| Bullock-cart driver ... | 2 | ... | 2 | Medical Practitioner ... | 1 | ... | 1 |
| Carpenter ... | 1 | ... | 1 | Mason ... | 4 | ... | 4 |
| Clerk ... | 7 | ... | 7 | No occupation ... | 14 | ... | 17 |
| Cook ... | 5 | 1 | 6 | Office boy ... | 1 | 3 | 4 |
| Cooly, Day labourer ... | 17 | ... | 17 | Overseer ... | 1 | ... | 1 |
| " Coffee-shop ... | 1 | ... | 1 | Peon ... | 1 | ... | 1 |
| " Gambling Farm ... | 1 | ... | 1 | Planter ... | 1 | ... | 1 |
| " Godown ... | 1 | ... | 1 | " Paddy ... | 2 | ... | 2 |
| " Railway ... | 1 | ... | 1 | " Rubber ... | 2 | ... | 2 |
| " Rubber estate ... | 4 | ... | 4 | " Pepper ... | 1 | ... | 1 |
| " Sampan ... | 1 | ... | 1 | Pointsman ... | 1 | ... | 1 |
| " Ship ... | 1 | ... | 1 | Pig breeder ... | 2 | ... | 2 |
| " Shop ... | 1 | ... | 1 | Prostitute ... | ... | 1 | 1 |
| " Soap factory ... | 1 | ... | 1 | Rag collector ... | 2 | ... | 2 |
| " Dock ... | 2 | ... | 2 | Rikisha puller ... | 5 | ... | 5 |
| " Tongkang ... | 2 | ... | 2 | Rubber tapper ... | 15 | ... | 15 |
| Contractor ... | 1 | ... | 1 | Salesman ... | 1 | ... | 1 |
| Clog maker ... | 1 | ... | 1 | Sailor ... | 5 | ... | 5 |
| Dispenser ... | 1 | ... | 1 | Sauce-seller ... | 1 | ... | 1 |
| Domestic Servant ... | 2 | ... | 2 | Scholar ... | 1 | ... | 1 |
| Druggist ... | 1 | ... | 1 | Shopkeeper ... | 1 | ... | 1 |
| Engineer ... | 2 | ... | 2 | Sinkeh ... | 1 | ... | 1 |
| Estate Owner ... | 1 | ... | 1 | Sawyer ... | 1 | ... | 1 |
| Fireman ... | 1 | ... | 1 | Surveyor ... | 1 | ... | 1 |
| Fitter ... | 1 | ... | 1 | Teacher ... | 2 | 1 | 3 |
| Foreman ... | 1 | ... | 1 | Tailor ... | 1 | ... | 1 |
| Fruit-seller ... | 1 | ... | 1 | Timber-carrier ... | 1 | ... | 1 |
| Goldsmith ... | 2 | ... | 2 | Trader ... | 4 | ... | 4 |
| Grass-cutter ... | 1 | 1 | 2 | Unknown ... | 21 | 29 | 50 |
| Hair dresser ... | 1 | ... | 1 | Vegetable-seller ... | 1 | ... | 1 |
| Hawker ... | 4 | ... | 4 | Warder, Prison ... | 1 | ... | 1 |
| Hawker, food ... | 1 | ... | 1 | Watchman ... | 1 | ... | 1 |
| Housewife ... | ... | 4 | 4 | | | | |
| <i>Carried forward ...</i> | 74 | 7 | 81 | TOTAL ... | 175 | 41 | 216 |

BERI-BERI HOSPITAL, PASIR PANJANG.

REPORT BY DR. H. J. GIBBS, *Medical Superintendent.*

1. There remained on 31st December, 1918, one hundred and fourteen patients.
2. Two hundred and fifteen were admitted in 1919 which gave a total treated of 329.
3. The average daily number was 104.
4. Of the admissions 199 were from the Tan Tock Seng Hospital, 11 from the General Hospital and 5 applied direct at the Pasir Panjang Hospital.
5. The diseases on admission were Beri-beri 201, Syphilitic Neuritis 5, Hepatic Cirrhosis 1, Enteric Fever 2, Malaria 4, Valvular disease of Heart and Carcinoma of Stomach, 1 each.
6. Only one paying patient, a Japanese, was admitted; the others were treated free of charge.
7. The nationalities of the admissions with their respective numbers were Chinese 207, Japanese 2, Malays 3, Tamils 2 and Eurasian 1.
8. Sixty-one of the admissions were from rubber estates.
9. All the admissions had fed on No. 2 Siam rice.
10. *Discharges.*—One hundred and sixty-nine were discharged relieved, 87 absconded and 6 were transferred to the General Hospital for surgical treatment.
11. *Deaths.*—Seven died, only one death being attributed to Beri-beri. The remaining six deaths were:—

| | | | | | |
|---------------------------|-----|-----|-----|-----|---|
| Enteric Fever | ... | ... | ... | ... | 2 |
| Cancer of Stomach | ... | ... | ... | ... | 1 |
| Valvular disease of heart | ... | ... | ... | ... | 1 |
| Dysentery | ... | ... | ... | ... | 1 |
| Tubercle | ... | ... | ... | ... | 1 |
12. The death-rate on the total treated was 2'13.
13. Fifteen cases of Malaria, 14 of Dysentery, 4 of Colitis, 2 of Diarrhoea, 5 of Influenza, 3 of Bronchitis, 2 of Scabies and 1 each of Alveolar Abscess, Arthritis, Synovitis, Conjunctivitis, Ulcer of Cornea, Pharyngitis, Asthma, Cystitis, Nephritis and Ringworm occurred amongst the patients in hospital.

KANDANG KERBAU HOSPITAL FOR FEMALES.

REPORT BY MR. F. CLARKE, *Assistant Surgeon-in-charge.**Work done:—*

| | | | | |
|----------------------------------|-----|-----|-------|-----|
| Remained on 31st December, 1918 | ... | ... | ... | 61 |
| Admitted during 1919 ... | ... | ... | ... | 439 |
| | | | Total | 500 |
| Discharged ... | ... | ... | ... | 355 |
| Died ... | ... | ... | ... | 72 |
| Remaining on 31st December, 1919 | ... | ... | ... | 73 |
| | | | Total | 500 |

The nationalities of those admitted were:—

| | | | | | |
|------------------------|-----|-----|-----|-----|-----|
| Europeans ... | ... | ... | ... | ... | 5 |
| Eurasians ... | ... | ... | ... | ... | 39 |
| Japanese ... | ... | ... | ... | ... | 39 |
| Chinese ... | ... | ... | ... | ... | 270 |
| Malays ... | ... | ... | ... | ... | 43 |
| Indians and Others ... | ... | ... | ... | ... | 104 |

The average daily sick was 68 and the percentage of deaths to total treated 14.4; out of 72 deaths 10 cases died within 48 hours of admission; eliminating those, the percentage would be 12.4.

The deaths were chiefly from:—

| | | | | | |
|----------------------|-----|-----|-----|-----|----|
| Phthisis ... | ... | ... | ... | ... | 18 |
| Dysentery ... | ... | ... | ... | ... | 8 |
| Heart disease ... | ... | ... | ... | ... | 7 |
| Syphilis ... | ... | ... | ... | ... | 7 |
| Pneumonia ... | ... | ... | ... | ... | 5 |
| Bright's disease ... | ... | ... | ... | ... | 5 |
| Malaria ... | ... | ... | ... | ... | 4 |
| Nervous disease ... | ... | ... | ... | ... | 4 |

The principal diseases treated were:—

| | | | | | |
|----------------------|-----|-----|-----|-----|----|
| Venereal ... | ... | ... | ... | ... | 87 |
| Malaria ... | ... | ... | ... | ... | 60 |
| Tuberculosis ... | ... | ... | ... | ... | 39 |
| Heart disease ... | ... | ... | ... | ... | 13 |
| Injuries ... | ... | ... | ... | ... | 19 |
| Bright's disease ... | ... | ... | ... | ... | 11 |

Out-patients.—Four thousand two hundred and thirteen patients were seen at the Dispensary among Government servants and their families.

Staff.—Mr. F. RODRIGUEZ retired on pension in May and I took over charge from him.

Nurse Probationers, Mrs. CERCLAY, Mrs. NONIS and Mrs. WYREWANADEN and 1st Grade Dressers B. NONIS and A. NARSAMULU worked throughout the year.

HEALTH OF SINGAPORE POLICE FORCE.

REPORT BY DR. T. MURRAY ROBERTSON, *Acting Police Surgeon.*

The total out-patients amongst the different nationalities comprising this Force treated at the Central Police Station number 6,156.

The principal diseases treated were:—

| | | | | | |
|-------------------------|-----|-----|-----|-----|-----|
| Fever unspecified ... | ... | ... | ... | ... | 620 |
| Malaria ... | ... | ... | ... | ... | 563 |
| Venereal disease ... | ... | ... | ... | ... | 1 |
| Injuries ... | ... | ... | ... | ... | 10 |
| Bronchitis ... | ... | ... | ... | ... | 485 |
| Skin diseases ... | ... | ... | ... | ... | 110 |
| Alimentary diseases ... | ... | ... | ... | ... | 137 |
| Cephalgia ... | ... | ... | ... | ... | 151 |
| Conjunctivitis ... | ... | ... | ... | ... | 8 |
| Other diseases ... | ... | ... | ... | ... | 251 |

The nationalities treated at the Central Police Station Office were:—

| | | | | | |
|---------------|-----|-----|-----|-----|-------|
| Europeans | ... | ... | ... | ... | 9 |
| Eurasians | ... | ... | ... | ... | 2 |
| Sikhs | ... | ... | ... | ... | 248 |
| Malays | ... | ... | ... | ... | 1,483 |
| Other Indians | ... | ... | ... | ... | 205 |
| Chinese | ... | ... | ... | ... | 191 |

The total number of visits paid to the sick room by various nationalities were:—

| | | | | | |
|---------------|-----|-----|-----|-----|-------|
| Europeans | ... | ... | ... | ... | 14 |
| Eurasians | ... | ... | ... | ... | 2 |
| Sikhs | ... | ... | ... | ... | 1,613 |
| Malays | ... | ... | ... | ... | 3,240 |
| Other Indians | ... | ... | ... | ... | 888 |
| Chinese | ... | ... | ... | ... | 415 |
| Others | ... | ... | ... | ... | 4 |

These include those patients discharged from hospital.

Notifiable diseases occurring among members of Police Force during 1919:—

| <i>Diseases.</i> | <i>Europeans.</i> | <i>Eurasians.</i> | <i>Sikhs.</i> | <i>Malays.</i> | <i>Indians.</i> | <i>Chinese.</i> | <i>Total.</i> |
|------------------------------|-------------------|-------------------|---------------|----------------|-----------------|-----------------|---------------|
| Measles | ... | ... | ... | ... | 1 | 1 | 2 |
| Enteric Fever | ... | ... | 1 | ... | ... | ... | 1 |
| Phthisis | ... | ... | 1 | ... | ... | ... | 1 |
| Cerebro-Spinal Meningitis... | ... | ... | ... | 2 | ... | ... | 2 |

The two Malays affected with Cerebro-Spinal Meningitis died.

The number of cases admitted to the General Hospital in 1919 from the Police Force was 858 made up:—

| <i>Diseases.</i> | <i>Europeans.</i> | <i>Eurasians.</i> | <i>Sikhs.</i> | <i>Malays.</i> | <i>Indians.</i> | <i>Chinese.</i> | |
|------------------------|-------------------|-------------------|---------------|----------------|-----------------|-----------------|----|
| Fevers unspecified | ... | 6 | ... | 72 | 101 | 39 | 11 |
| Malaria | ... | ... | ... | 16 | 20 | 10 | 5 |
| Venereal Diseases | ... | ... | ... | 12 | 17 | 20 | 7 |
| Injuries | ... | 1 | ... | 40 | 27 | 22 | 5 |
| Bronchitis | ... | 1 | ... | 53 | 26 | 8 | 3 |
| Skin Diseases | ... | ... | ... | 46 | 14 | 7 | 2 |
| Alimentary complaints | ... | 1 | ... | 14 | 10 | 5 | 5 |
| Other diseases | ... | ... | ... | 112 | 43 | 27 | 9 |
| No appreciable disease | ... | ... | ... | 20 | 15 | 4 | 2 |
| Total | ... | 9 | ... | 385 | 273 | 142 | 49 |

Recruits admitted to the Force were:—

| | | | | | |
|---------------------|-----|-----|-----|-----|-----|
| Eurasians | ... | ... | ... | ... | 3 |
| Sikhs | ... | ... | ... | ... | 11 |
| Malays | ... | ... | ... | ... | 145 |
| Javanese and others | ... | ... | ... | ... | 24 |
| Indians | ... | ... | ... | ... | 44 |
| Chinese | ... | ... | ... | ... | 49 |

totalling 276 as against rejected candidates:—

| | | | | | |
|-----------|-----|-----|-----|-----|-----|
| Eurasians | ... | ... | ... | ... | Nil |
| Sikhs | ... | ... | ... | ... | 7 |
| Malays | ... | ... | ... | ... | 24 |
| Javanese | ... | ... | ... | ... | 8 |
| Indians | ... | ... | ... | ... | 13 |
| Chinese | ... | ... | ... | ... | 14 |

totalling 66.

All the town and rural Police Stations were visited during the year.

APPENDIX B.

PENANG.

REPORT BY DR. W. H. FRY, M.R.C.S. (ENGLAND), L.R.C.P. (LONDON),
Chief Medical Officer.

The estimated population for Penang Island is 152,642; this is approximate only as no returns of immigration or emigration are kept other than those to and from India.

The number of births recorded was 4,603; the nationalities being:—

| | | | | | |
|---------------|-----|-----|-----|-----|-------|
| European | ... | ... | ... | ... | 41 |
| Eurasian | ... | ... | ... | ... | 53 |
| Chinese | ... | ... | ... | ... | 2,600 |
| Malay | ... | ... | ... | ... | 1,334 |
| Dravidian | ... | ... | ... | ... | 501 |
| Other Indians | ... | ... | ... | ... | 36 |
| Others | ... | ... | ... | ... | 38 |

The number of deaths recorded was 6,366.

The birth and death-rates for the past 5 years are:—

| <i>Year.</i> | <i>Births-rate.</i> | <i>Death-rate.</i> | <i>Infantile Mortality.</i> |
|--------------|---------------------|--------------------|-----------------------------|
| 1915 | 27'93 | 30'71 | 203 |
| 1916 | 27'11 | 30'10 | 165 |
| 1917 | 29'48 | 35'72 | 229 |
| 1918 | 37'18 | 44'01 | 204 |
| 1919 | 30'16 | 41'71 | 177'23 |

The high death-rate in 1918 was largely due to Influenza.

The number of European births is somewhat abnormal owing to the presence of the Maternity Hospital in Penang, attracting European women from the mainland; the number of such European births was 22.

The chief causes of death were:—

| | | | | | |
|-----------------------|-----|-----|-----|-----|-----|
| Phthisis | ... | ... | ... | ... | 820 |
| Malaria | ... | ... | ... | ... | 752 |
| Fever unclassified | ... | ... | ... | ... | 576 |
| Enteritis | ... | ... | ... | ... | 413 |
| Senile Decay | ... | ... | ... | ... | 305 |
| Beri-beri | ... | ... | ... | ... | 290 |
| Infantile Convulsions | ... | ... | ... | ... | 272 |
| Dysentery | ... | ... | ... | ... | 257 |
| Influenza | ... | ... | ... | ... | 216 |
| Debility | ... | ... | ... | ... | 132 |

The causes of death are only approximately correct as many deaths are recorded in outstations without any skilled enquiry as to the nature of the disease.

The Birth and Death Registers themselves contain numerous errors owing to the births and deaths registered in many Police Stations being recorded by the police in Javi character, hence many names other than Malay are incorrectly registered as by the time a clerk has re-translated a Chinese or Tamil name written in Javi back into English it has often lost all resemblance to the original.

Zymotic.

The number of deaths from Influenza in Penang Island was 48 as compared with 318 in 1918, the mortality from this disease was thus much less than in the previous year though there were but few months in which cases of Influenza did not occur.

Through the medium of ships, 168 deaths from Influenza took place at the Quarantine Island, many passengers being landed there with this disease.

The number of Small-pox cases occurring in the Island was 398 with 142 deaths compared with 83 cases and 26 deaths last year.

One thousand eight hundred and sixty-three vaccinations were performed by the Government Vaccinator in Penang and 1,738 by private vaccinators.

One case of Cholera which proved fatal at the Quarantine Camp, Jelutong, the patients being removed there from Sungei Pinang Road.

Several cases of Cholera were landed at the Quarantine Island from the British India cooly ships and numerous deaths on the Island resulted there, from details of which are recorded in the report under Quarantine.

Eight cases of Plague which all proved fatal occurred in Penang Island. During the latter part of the year an outbreak of Malaria occurred in the Fort—the Sikh Police being more particularly affected investigation discovered that *Anopheles ludlowi* were breeding in large numbers in the moat, continuous oiling and the clearing of weeds is now being undertaken. Numerous other mosquito-breeding areas exist in the town and outlying districts and some were dealt with during the year.

HOSPITALS.

The number of admissions and number of deaths in all hospitals in Penang and the hospital at Quarantine Station for the past 5 years are:—

| Year. | | | | Admissions. | Deaths. |
|-------|-----|-----|-----|-------------|---------|
| 1915 | ... | ... | ... | 8,315 | 877 |
| 1916 | ... | ... | ... | 9,347 | 903 |
| 1917 | ... | ... | ... | 8,718 | 977 |
| 1918 | ... | ... | ... | 10,061 | 1,452 |
| 1919 | ... | ... | ... | 12,036 | 1,724 |

A steady and progressive increase in the number of patients treated is apparent.

The chief recorded causes of deaths for these hospitals for the same period were:—

| Disease. | 1915. | | 1916. | | 1917. | | 1918. | | 1919. | |
|-----------------------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|
| | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Phthisis ... | 309 | 174 | 264 | 127 | 272 | 145 | 354 | 175 | 380 | 176 |
| Malaria ... | 1,111 | 57 | 1,677 | 106 | 1,493 | 118 | 1,379 | 137 | 2,107 | 175 |
| Dysentery ... | 342 | 129 | 496 | 117 | 406 | 119 | 337 | 132 | 493 | 182 |
| Diarrhœa ... | 136 | 8 | 151 | 6 | 140 | 4 | 150 | 21 | 161 | 20 |
| Ankylostomiasis ... | 197 | 34 | 261 | 37 | 306 | 63 | 360 | 80 | 207 | 42 |
| Venereal Diseases ... | 997 | 5 | 1,238 | 41 | 993 | 36 | 771 | 52 | 764 | 31 |
| Influenza ... | ... | ... | ... | ... | ... | ... | 964 | 185 | 472 | 177 |
| Tetanus ... | 6 | 6 | 3 | 2 | 6 | 3 | 3 | 3 | 1 | 1 |
| Plague ... | 1 | 1 | 4 | 3 | 6 | 4 | 29 | 17 | 5 | 4 |
| Cholera ... | ... | ... | 1 | 1 | 14 | 8 | 80 | 55 | 285 | 180 |
| Small-pox ... | 28 | 5 | 131 | 38 | 39 | 10 | 58 | 16 | 352 | 108 |
| Enteric Fever ... | ... | ... | ... | ... | 11 | 4 | 20 | 13 | 13 | 4 |

The increase in the number of Malarial cases was above all former years. Microscopic examinations of the blood were undertaken in all cases, the chief parasites (when found) being:—

| | | | | | |
|-----------------|-----|-----|-----|-----|-----|
| Sub Tertian ... | ... | ... | ... | ... | 108 |
| Benign Tertain | ... | ... | ... | ... | 236 |
| Unclassified | ... | ... | ... | ... | 312 |

The cases of Phthisis show a steady tendency to increase, the disease is very prevalent throughout the Peninsula but it is only the worst cases that seek admission to hospital.

The number of Venereal disease cases treated by no means represents the number of those infected, only the worst cases seeking admission, a large number of those admitted with other diseases were found to be infected with Venereal Diseases and no idea of the far reaching effects of this disease can be obtained from the figures of this report.

The Penang Committee of the Hospital Board consisted of the Hon'ble the Resident Councillor, Chief Medical Officer, Penang, and QUAH BENG KEE, Esquire.

The Committee of the District Hospital consisted of the Hon'ble the Resident Councillor, the Chief Medical Officer, the Chief Police Officer, Colonial Chaplain and nine Chinese gentlemen, but few of the latter attend the meetings.

The Revenue collected during the year was as under:—

| | \$ | c. |
|--------------------------------------|---------|----|
| Birth and Death Registrations | 406 | 00 |
| Bill of Health | 3,170 | 00 |
| Analyst's Fees | 3,022 | 50 |
| Poisons Licences | 110 | 00 |
| Coffin Certificates | 170 | 00 |
| Hide Certificates | 6 | 00 |
| Hospital Board Revenue | *50,916 | 60 |
| Disinfection of Ships | 6,342 | 50 |

*Exclusive of the Government Contribution balance at credit on 31st December, 1919. (Government Contribution \$184,523).

Expenditure:—

| | \$ | c. |
|-----------------------------------|---------|----|
| Hospital Board Expenditure | 211,489 | 75 |

Staff.

Dr. J. GRAY acted as Chief Medical Officer in addition to his other duties from the beginning of the year until the 9th April, 1919, when he left on long leave being succeeded by Dr. J. R. McVAIL, who handed over to Dr. W. H. FRY on August 15th.

Dr. J. H. TENNENT arrived from Singapore on 29th August, and assumed the duties of Senior Surgeon.

Dr. V. B. KYLE and Dr. W. A. TAYLOR returned to the Colony from duty with the Royal Army Medical Corps on 14th November, 1919; the former assumed duty at the District Hospital relieving Dr. H. B. DODDS who became Medical Officer, General Hospital, while the latter assumed the duties of Senior Health Officer and Port Health Officer relieving in the latter appointment Assistant Surgeon WESTERHOUT who had been acting since 10th April, 1919.

Mr. J. C. COWAP was in charge as Deputy Government Analyst until April 2nd, when he went on leave being succeeded by Mr. J. W. HADDON, who was transferred to Singapore on August 5th, after which date, Dr. W. H. FRY assumed charge of the petroleum testing and office work, and Mr. B. S. WALTON tested spirits for duty purposes.

QUARANTINE CAMP, JELUTONG.

Four hundred and eighty-five cases were admitted during the year, namely, Small-pox 341, Chicken-pox 89, Measles 27, Plague 3, Cholera 14, Observation 9, and Convulsion 2.

There were 119 deaths during the year, Small-pox 107, Cholera 7, Plague 3, and Convulsion 2.

The death-rate to total treated was 24.53. There were 628 "Contacts" during the year.

GENERAL HOSPITAL, PENANG.

The numbers treated in the General Hospital during the past 5 years were:—

| Year. | 1st and 2nd Class Wards. | Deaths. | Percent- age. | Native Ward. | Deaths. | Percent- age. |
|-------|-----------------------------|---------|------------------|--------------|---------|------------------|
| 1915 | 334 | ... | 1.8 | 2,207 | ... | 3.94 |
| 1916 | 331 | 9 | 2.7 | 2,124 | 142 | 6.68 |
| 1917 | 350 | 19 | 5.4 | 2,284 | 105 | 7.2 |
| 1918 | 503 | 35 | 6.95 | 2,633 | 232 | 8.81 |
| 1919 | 462 | 21 | 4.58 | 2,984 | 291 | 9.75 |

Of the above 21 deaths in the 1st and 2nd class wards, 7 took place within 48 hours of admission, and of the 291 deaths in the Native Ward 73 were within 48 hours: deducting these the death-rate was 3·07 per cent and 7·48 per cent respectively.

The number of police admitted during the year was 520 comprising:—

| | | | | | |
|----------------------|-----|-----|-----|-----|-----|
| Europeans ... | ... | ... | ... | ... | 8 |
| Sikhs ... | ... | ... | ... | ... | 361 |
| Malays ... | ... | ... | ... | ... | 125 |
| Chinese ... | ... | ... | ... | ... | 12 |
| Dravidians, etc. ... | ... | ... | ... | ... | 14 |

These numbers are in excess of previous years the increase being due to the large number of Sikh police admitted to hospital from the Fort owing to Malaria a subject alluded to above, the greatest number of admissions took place during October when 60 Sikhs, 9 Malays, 3 Indians, and 2 Chinese were admitted to the General Hospital.

The chief diseases from which the police suffered were Malaria, Bronchitis, Asthma and Venereal Diseases.

It is a matter for regret that so few Chinese dressers can be engaged, the bulk of the native patients both in the General and District Hospitals are Chinese and the dressers that attend them are thus alien to their patients in language, nationality, ideas and sympathy.

The daily average number of sick was, Males 89·88 compared with 74·20 in 1918, and females 42·94 compared with 41·73 in 1918.

The chief diseases treated included:—

| | | | | <i>Treated.</i> | <i>Deaths.</i> |
|-----------------------|-----|-----|-----|-----------------|----------------|
| Malaria Fever ... | ... | ... | ... | 719 | 42 |
| Venereal Diseases ... | ... | ... | ... | 206 | 6 |
| Phthisis ... | ... | ... | ... | 113 | 49 |
| Dysentery ... | ... | ... | ... | 80 | 35 |
| Diarrhœa ... | ... | ... | ... | 62 | 4 |
| Beri-beri ... | ... | ... | ... | 15 | 8 |

As recorded in last year's report the accommodation at the General Hospital both European and Native has been severely taxed at times to find accommodation for the numbers seeking admission.

These conditions existed during September, October and November and during these months several European residents had to be refused, admission to the 1st Class Wards, while practically every month patients were refused admission to the 2nd Class Wards.

The number of free patients treated at the General Hospital during the year was 1,303, the majority of these being "police cases".

The number of persons certified as lunatics and transferred to Singapore Asylum was 37 being 32 males and 5 females.

REPORT ON SURGERY AT THE GENERAL HOSPITAL, PENANG, DURING 1919.

REPORT BY DR. J. HALL TENNENT, M.B., CH.B., *Acting Surgeon-in-charge.*

The following table shows the operations and results:—

| | Total. | Cured. | Relieved. | Not improved. | Died. | Remaining. |
|---|--------|--------|-----------|---------------|-------|------------|
| 1. Head and Neck:— | | | | | | |
| Excision of Eyeball ... | 4 | 4 | ... | ... | ... | ... |
| Epulis ... | 1 | 1 | ... | ... | ... | ... |
| Lipoma of Neck ... | 3 | 3 | ... | ... | ... | ... |
| Epithelioma of Scalp ... | 1 | 1 | ... | ... | ... | ... |
| Harelip ... | 2 | 2 | ... | ... | ... | ... |
| Ranula ... | 2 | 1 | 1 | ... | ... | ... |
| Trephining ... | 1 | ... | ... | ... | 1 | ... |
| Cataract extraction ... | 1 | ... | ... | 1 | ... | ... |
| 2. Thorax:— | | | | | | |
| 3. Abdomen:— | | | | | | |
| Imperforate Anus ... | 2 | 1 | ... | ... | 1 | ... |
| Hernia, Inguinal ... | 6 | 6 | ... | ... | ... | ... |
| " Strangulated ... | 6 | 4 | ... | ... | 2 | ... |
| " Ventral ... | 1 | 1 | ... | ... | ... | ... |
| Fibrosarcoma abdominal wall ... | 1 | 1 | ... | ... | ... | ... |
| Gastric fistula closed ... | 1 | 1 | ... | ... | ... | ... |
| Liver abscess ... | 4 | 2 | ... | ... | 2 | ... |
| Exploratory laparotomy ... | 7 | 2 | ... | 4 | 1 | ... |
| Hæmorrhoids ... | 9 | 9 | ... | ... | ... | ... |
| Gastro-enterostomy ... | 4 | 1 | 2 | ... | 1 | ... |
| Appendectomy ... | 3 | 3 | ... | ... | ... | ... |
| Wounds of abdomen ... | 7 | 4 | ... | ... | 3 | ... |
| Splenectomy ... | 1 | ... | ... | ... | 1 | ... |
| Jejunostomy ... | 1 | 1 | ... | ... | ... | ... |
| 4. Genito Urinary:— | | | | | | |
| Hydrocele ... | 6 | 6 | ... | ... | ... | ... |
| Hæmatocele ... | 3 | 3 | ... | ... | ... | ... |
| Stone in bladder ... | 1 | 1 | ... | ... | ... | ... |
| Transplantation of ureter ... | 1 | ... | ... | ... | ... | ... |
| Periacerraphy ... | 1 | 1 | ... | ... | ... | ... |
| 5. Limbs:— | | | | | | |
| Amputations ... | 10 | 6 | ... | ... | 3 | 1 |
| Kordoleon's Operation for elephantiasis ... | 1 | 1 | ... | ... | ... | ... |
| Tarsectomy ... | 1 | 1 | ... | ... | ... | ... |
| Osteomyelitis, acute ... | 2 | 2 | ... | ... | ... | ... |
| 6. Spine and cord:— | | | | | | |
| Laminectomy ... | 1 | ... | ... | ... | 1 | ... |
| 7. Blood vessels:— | | | | | | |
| Ligation for aneurysm ... | 2 | 2 | ... | ... | ... | ... |
| " " wounds ... | 1 | 1 | ... | ... | ... | ... |
| Total ... | 98 | 72 | 3 | 5 | 17 | 1 |

342 Minor Operations were also performed.

PRISON HOSPITAL.

REPORT BY DR. W. H. FRY, M.R.C.S. (England), L.R.C.P. (London),
Chief Medical Officer.

The Sanitary condition of the Prison and the health of the prisoners was satisfactory. The daily average sick was 9.8 compared with 11.7 in 1918 and 7.48 in 1917. At the beginning of the year there remained 6 prisoners from 1918.

The admissions and deaths for the past four years were:—

| <i>Year.</i> | <i>Admissions.</i> | <i>Number of Vagrants included in above.</i> | <i>Deaths.</i> |
|--------------|--------------------|--|----------------|
| 1919 | 328 | 48 | 6 |
| 1918 | 399 | 50 | 7 |
| 1917 | 285 | 8 | 4 |
| 1916 | 351 | 26 | 13 |

The causes of death during 1919 were Dysentery 4, Phthisis 1 and Pneumonia 1.

The Chief diseases treated were:—Diarrhœa 51, Dysentery 41, Venereal Diseases 37, Malaria Fever 21 and Ulcer 18.

The Chief nationalities of those admitted were:—Chinese 175, Tamils 83, Malays 24 and Kling Mohammedans 21.

DISTRICT HOSPITAL, PENANG.

REPORT BY DR. V. B. KYLE, M.D. (Dublin), *Medical Officer-in-charge.*

There remained on the 31st December, 1918, 277 patients and 4,572 were admitted during 1919 making a total of 4,849. The corresponding figures for 1918 were 327 and 4,342 making a total of 4,669.

The number of deaths during the year was 560, giving a death-rate of 11.54 per cent, as compared with 666 and 14.26 per cent in 1918.

Of the deaths 41 occurred within 24 hours of admission and 97 within 48 hours; making a percentage of 9.26 and 10.26 respectively.

The principal diseases treated were:—

| | <i>Admissions.</i> | <i>Deaths.</i> | <i>Percentage.</i> |
|------------------------|--------------------|----------------|--------------------|
| Dysentery | 266 | 95 | 35.71 |
| Influenza | 8 | 5 | 6.25 |
| Malaria (unclassified) | 671 | 33 | 4.91 |
| " Benign Tertian | 227 | 23 | 10.13 |
| " Quartan | 7 | ... | ... |
| " Malignant Tertian | 60 | 20 | 33.33 |
| " Chronic | 25 | ... | ... |
| " Cerebral | 3 | 3 | 100.00 |
| Venereal Disease | 687 | 21 | 3.05 |
| Phthisis | 237 | 115 | 48.52 |
| Ankylostomiasis | 143 | 24 | 16.77 |

The average daily sick was 299.35 as compared with 346.42 in 1918.

Five hundred and ninety-two minor operations were performed during the year.

Female Wards.

REPORT BY DR. W. H. FRY, M.R.C.S. (ENGLAND), L.R.C.P. (LONDON),
Chief Medical Officer.

Thirty-two cases remained at the end of 1918 and eight cases were admitted during the year making a total treated of 40 cases.

There were six deaths during the year.

Ophthalmic Ward.

REPORT BY DR. V. B. KYLE, M.D. (DUBLIN), *Medical Officer.*

One hundred and sixty-six patients were treated during the year of whom 157 were in-patients and 9 out-patients.

Five operations were performed during the year with satisfactory results.

BALIK PULAU HOSPITAL.

REPORT BY DR. W. H. FRY, M.R.C.S. (ENGLAND), L.R.C.P. (LONDON),
Chief Medical Officer.

Staff.—The hospital was in charge of Dresser GHOUSE up to the end of March when Assistant Surgeon NICKELSEN assumed duty on return from leave.

Work done.—Two hundred and thirty cases were admitted during the year, this with 14 cases remaining from the previous year made a total of 244 cases treated in all. The average daily sick was 19·83 as compared with 16·70 for 1918.

The principal diseases treated were:—

| | <i>Cases.</i> | <i>Deaths.</i> |
|-------------------------------|---------------|----------------|
| Malaria | 51 | 1 |
| Ulcer | 47 | — |
| Venereal Diseases | 14 | — |
| Pulmonary Tuberculosis | 8 | 4 |
| Bronchitis | 8 | — |
| Pyrexia | 13 | — |
| Anæmia | 6 | 3 |
| Chronic Nephritis | 5 | 3 |
| Debility | 6 | 4 |

There were 23 deaths during the year. The percentage of deaths to total treated was 9·83 compared with 15·49 in 1918.

Infectious Diseases.—Twenty-six cases of Small-pox were reported during the year. Eight cases at Telok Kumbar, 12 at Telok Bahang, 5 at Bukit Lun Chow Yean and 1 case at Sungei Penang Road.

One case of Chicken-pox was reported at Ginting.

One thousand three hundred and ninety vaccinations were performed among residents of Telok Kumbar, Telok Bahang, Sungei Penang, and Balik Pulau. The majority of these cases were re-vaccinations in adults and children. The system of issuing vaccination notices to occupants of houses in an infected village was found to be successful. The police rendered great help in taking census on inmates of dwellings in various villages and in serving the necessary vaccination notices.

LUMUT HOSPITAL, DINDINGS.

REPORT BY DR. W. H. FRY, M.R.C.S. (ENGLAND), L.R.C.P. (LONDON),
Chief Medical Officer.

During the year a new male ward was in course of construction.

There were 319 admissions, with 18 remaining from the previous year made a total of 337, as compared with 479 for the previous year. The daily average number of patients was 15.43 compared with 17.31 in 1918.

The total amount of hospital charges was \$167.37.

The principal diseases treated included:—

| | | | | | | |
|-----------------------|-----|-----|----|------|---|---------|
| Ankylostomiasis ... | ... | ... | 5 | with | 2 | deaths. |
| Dysentery ... | ... | ... | 16 | „ | 9 | „ |
| Malaria ... | ... | ... | 98 | „ | 7 | „ |
| Pneumonia ... | ... | ... | 4 | „ | 4 | „ |
| Phthisis ... | ... | ... | 11 | „ | 4 | „ |
| Venereal Diseases ... | ... | ... | 27 | „ | 4 | „ |
| Ulcers ... | ... | ... | 81 | „ | — | „ |
| Chronic Nephritis ... | ... | ... | 8 | „ | 4 | „ |

Thirty-eight deaths occurred, of these 11 died within 48 hours of admission. The percentage of deaths to total treated was 10.11.

The percentage of deaths excluding those dying within 48 hours of admission was 7.04.

Admission and deaths were as follows:—

| | | | | <i>Admissions.</i> | <i>Deaths.</i> |
|--------------|-----|-----|-----|--------------------|----------------|
| Dindings ... | ... | ... | ... | 310 | 36 |
| Sitiawan ... | ... | ... | ... | 9 | — |

Infectious Diseases.—There was one case of Chicken-pox during the year. During October and November there were three cases of Small-pox in Pangkor and three cases in Kampong Bahru (Dindings) with no deaths.

LEPER ASYLUM, PULAU JEREJAK.

REPORT BY DR. W. A. TAYLOR, *Medical Officer-in-charge.*

Statistics:—

Remained on 31st December, 1918:—

| | | | | | |
|--------------|-----|-----|-----|-----|-------|
| Colonial ... | ... | ... | ... | ... | 197 |
| Perak ... | ... | ... | ... | ... | 150 |
| Selangor ... | ... | ... | ... | ... | 25 |
| Kedah ... | ... | ... | ... | ... | 13 |
| | | | | | — 385 |

Admitted during 1919:—

| | | | | | |
|--------------|-----|-----|-----|-----|-------|
| Colonial ... | ... | ... | ... | ... | 57 |
| Perak ... | ... | ... | ... | ... | 79 |
| Selangor ... | ... | ... | ... | ... | 15 |
| Kedah ... | ... | ... | ... | ... | 4 |
| | | | | | — 155 |

Total inmates ... 540

| | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-------|
| Discharged during 1919 | ... | ... | ... | ... | ... | nil |
| Absconded during 1919:— | | | | | | |
| Colonial | ... | ... | ... | ... | ... | 3 |
| Perak | ... | ... | ... | ... | ... | nil |
| Selangor | ... | ... | ... | ... | ... | nil |
| Kedah | ... | ... | ... | ... | ... | nil |
| | | | | | | — 3 |
| Died during 1919:— | | | | | | |
| Colonial | ... | ... | ... | ... | ... | 57 |
| Perak | ... | ... | ... | ... | ... | 66 |
| Selangor | ... | ... | ... | ... | ... | 10 |
| Kedah | ... | ... | ... | ... | ... | 6 |
| | | | | | | — 139 |
| Remaining during 1919:— | | | | | | |
| Colonial | ... | ... | ... | ... | ... | 194 |
| Perak | ... | ... | ... | ... | ... | 163 |
| Selangor | ... | ... | ... | ... | ... | 30 |
| Kedah | ... | ... | ... | ... | ... | 11 |
| | | | | | | — 398 |

The average number of inmates was 495.33.

The percentage of deaths was 25.74.

Staff.—Assistant Surgeon A. H. WHEATLEY worked throughout the year as Resident Assistant Surgeon. The health of the Staff has been fair.

Inmates.—(a) The general health of the inmates has been fair. (b) *Treatment of Leprosy:*—7 patients (5 Chinese and 2 Eurasians) were treated at the commencement of the year by Injections of Sodium Gynocardate, but only 4 continued the treatment. All showed slight improvement at the end of the year.

Buildings.—The various buildings were whitewashed and tarred, numerous minor repairs were done.

The walls of the reservoir in the Leper Asylum were raised, but in spite of this it still overflowed on 29 days. This reservoir is to be enlarged in 1920.

A partial re-roofing was completed in March but collapsed five days after completion.

The embarkation Reservoir (outside the Leper Asylum) is under repairs to make it water tight.

A ward for European Lepers is being erected at the North Camp.

The Tables appended are:—

- (a) Giving the number of admissions, total number of deaths and the average for 1919.
- (b) Giving the nationality of the inmates.
- (c) Shewing the occupation of inmates previous to admission.

TABLE A.

SHEWING THE NUMBER OF ADMISSIONS, TOTAL NUMBER OF DEATHS AND THE TOTAL NUMBER OF INMATES AND THE DAILY AVERAGE FOR 1919.

| Year. | Remained from previous year. | Colonial. | Perak. | Selangor. | Kedah. | Total. | Deaths. | Percentage of Deaths. | Daily average. |
|-------|------------------------------|-----------|--------|-----------|--------|--------|---------|-----------------------|----------------|
| 1919. | 385 | 57 | 79 | 15 | 4 | 540 | 139 | 25.74 | 405.33 |

TABLE B.

SHEWING THE NATIONALITIES OF INMATES 1919.

| Nationality. | Colonial. | Perak. | Selangor. | Kedah. | Total. |
|-----------------|-----------|--------|-----------|--------|--------|
| Cantonese ... | 74 | 76 | 7 | 5 | 162 |
| Eurasians ... | 5 | 1 | ... | ... | 6 |
| Fookchew ... | ... | ... | 1 | ... | 1 |
| Hokien ... | 53 | 21 | 4 | 3 | 81 |
| Hooichew ... | 2 | ... | ... | ... | 2 |
| Hylam ... | 20 | 2 | 1 | 2 | 25 |
| Hylokhong ... | 1 | ... | ... | ... | 1 |
| Javanese ... | 2 | 1 | .. | ... | 3 |
| Kheh ... | 27 | 70 | 19 | 3 | 119 |
| Kowchew ... | 1 | ... | ... | ... | 1 |
| Kling Islam ... | 1 | ... | ... | ... | 1 |
| Looichew ... | 4 | ... | ... | ... | 4 |
| Malay ... | 3 | ... | 1 | ... | 4 |
| Santong ... | 1 | ... | ... | ... | 1 |
| Sikh ... | 1 | ... | ... | ... | 1 |
| Tamil ... | 27 | 38 | 3 | 2 | 70 |
| Teochew ... | 32 | 20 | 4 | 2 | 58 |
| Total ... | 254 | 229 | 40 | 17 | 540 |

TABLE C.
 SHEWING THE OCCUPATION OF INMATES FOR 1919.

| Occupation. | Colonial. | Perak. | Selangor. | Kedah. | Total. | Remarks. |
|-------------------------|------------|------------|-----------|-----------|------------|----------|
| Actor ... | 1 | ... | ... | ... | 1 | |
| Barber ... | 2 | ... | ... | ... | 2 | |
| Basket-maker ... | ... | 1 | ... | ... | 1 | |
| Boat-men ... | 3 | 1 | ... | ... | 4 | |
| Boy ... | 1 | ... | ... | ... | 1 | |
| Black-smith ... | 3 | ... | ... | ... | 3 | |
| Butcher ... | ... | ... | 1 | ... | 1 | |
| Cart-driver ... | 1 | 2 | ... | 1 | 4 | |
| Cart-puller ... | 1 | ... | ... | ... | 1 | |
| Carpenter ... | 10 | 6 | ... | 2 | 18 | |
| Chinese Clerk ... | ... | ... | ... | 1 | 1 | |
| Chinting ... | 1 | ... | ... | ... | 1 | |
| Cobbler ... | ... | 1 | ... | ... | 1 | |
| Cook ... | 4 | ... | ... | 1 | 5 | |
| Conductor ... | 1 | ... | ... | ... | 1 | |
| Cake-seller ... | 2 | ... | ... | ... | 2 | |
| Dresser ... | 1 | ... | ... | ... | 1 | |
| Engine-driver ... | 1 | ... | ... | ... | 1 | |
| Fireman ... | 1 | ... | ... | ... | 1 | |
| Fishermen ... | 1 | 2 | ... | ... | 3 | |
| Fitter ... | 2 | ... | ... | ... | 2 | |
| General coolie ... | 131 | 100 | 18 | 8 | 257 | |
| Gardener, vegetable ... | 11 | 14 | 1 | 1 | 27 | |
| Gold-smith ... | 2 | ... | ... | ... | 2 | |
| Grass-cutter ... | 1 | ... | ... | ... | 1 | |
| Hawker ... | 3 | 1 | 1 | ... | 5 | |
| Mason ... | 4 | 2 | ... | 1 | 7 | |
| Mining coolie ... | 4 | 77 | 17 | 2 | 100 | |
| Motor-car driver ... | 2 | ... | ... | ... | 2 | |
| Native physician ... | 1 | 1 | ... | ... | 2 | |
| Nil ... | 26 | 7 | 1 | ... | 34 | |
| Painter ... | 3 | 3 | ... | ... | 6 | |
| Planter ... | 1 | ... | ... | ... | 1 | |
| Post peons ... | 2 | ... | 1 | ... | 3 | |
| 'Rikisha-puller ... | 3 | 1 | ... | ... | 4 | |
| Rubber-tapper ... | 2 | 3 | ... | ... | 5 | |
| Sailor ... | 2 | ... | ... | ... | 2 | |
| Scavenger ... | 1 | ... | ... | ... | 1 | |
| School boy ... | 1 | ... | ... | ... | 1 | |
| Shoe-maker ... | 1 | 1 | ... | ... | 2 | |
| Shop-keeper ... | 3 | 1 | ... | ... | 4 | |
| Stone-breaker ... | 1 | ... | ... | ... | 1 | |
| Tamil clerk ... | ... | 1 | ... | ... | 1 | |
| Tailor ... | 4 | 1 | ... | ... | 5 | |
| Tindal ... | 1 | ... | ... | ... | 1 | |
| Vagrant ... | 2 | 1 | ... | ... | 3 | |
| Watchmen ... | 4 | 1 | ... | ... | 5 | |
| Wood-cutter ... | 2 | 1 | ... | ... | 3 | |
| TOTAL ... | 254 | 229 | 40 | 17 | 540 | |

APPENDIX C.

PROVINCE WELLESLEY.

REPORT BY DR. H. W. FURNIVALL, M.B., BAC. SURG. (DURHAM),
Medical and Health Officer-in-charge.

The health of the Province maintained its usual good standard, assisted by an absence of any pandemic disease, and marked diminution of the usual notifiable infectious diseases as per following table:—

| | 1917. | 1918. | 1919. |
|-------------------|-------|-------|-------|
| Variola | 331 | 112 | 65 |
| Varicella | 38 | 35 | 18 |
| Puerperal | 1 | 2 | 1 |
| Enteric | nil | 2 | 2 |
| Cholera | 2 | — | 13 |
| Vaccinia | 1 | — | — |
| Erysipelas | — | — | 1 |
| Total | 373 | 151 | 100 |

The following table gives total in-patients and out-patients treated in our Government Hospitals and Dispensaries.

| Year. | In-patients. | Total % Death-rate. | Out-patients. |
|-------|--------------|---------------------|---------------|
| 1917 | 2,885 | 10'57 | 4,190 |
| 1918 | 3,081 | 12'07 | 4,669 |
| 1919 | 2,935 | 9'50 | 3,745 |

Statistics of certain diseases treated:—

Small-pox cases occurred to total of 65 of which 51 were in Northern District, 13 in Central District and one in Southern District.

I attach a table of certain notifiable diseases occurring in Province Wellesley and adjacent territory. Plague passed us by. Most of our small-pox followed the outbreak in Penang and Cholera was obviously imported by recent immigrants—most of whose ships were arriving infected from India.

TABLE A.
Monthly incidence of Notifiable (infections) cases in Province Wellesley compared with reported incidence in adjacent places.

1919.

| PLACES. | JANUARY. | | | FEBRUARY. | | | MARCH. | | | APRIL. | | | MAY. | | | JUNE. | | | JULY. | | | AUGUST. | | | SEPTEMBER. | | | OCTOBER. | | | NOVEMBER. | | | DECEMBER. | | |
|------------------------|------------|----------|---------|------------|----------|---------|------------|----------|---------|------------|----------|---------|------------|----------|---------|------------|----------|---------|------------|----------|---------|------------|----------|---------|------------|----------|---------|------------|----------|---------|------------|----------|---------|-----------|-----|-----|
| | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | Small-pox. | Cholera. | Plague. | | | |
| Province Wellesley ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | | |
| Penang ... | 4 | 1 | 3 | 31 | ... | 3 | 127 | 3 | ... | 51 | ... | ... | 19 | ... | 1 | 9 | ... | ... | 34 | ... | ... | 38 | 50 | 2 | 39 | 14 | ... | 30 | 30 | ... | 29 | 7 | ... | 12 | ... | ... |
| Federated Malay States | 2 | 18 | ... | 1 | ... | ... | 4 | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | 3 | 19 | 1 | 1 | 31 | 1 | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Kedah ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | ... | ... | ... | 9 | ... | ... | ... | ... | ... |
| TOTAL ... | 7 | 19 | 3 | 32 | ... | 3 | 142 | 3 | ... | 57 | ... | ... | 27 | 2 | 1 | 26 | 1 | ... | 54 | 23 | 1 | 46 | 81 | 3 | 45 | 14 | ... | 35 | 37 | ... | 38 | 7 | ... | 14 | ... | ... |

Our types of Small-pox were:—

| <i>Confluent.</i> | <i>Modified.</i> | <i>Discrete.</i> | <i>Hæmorrhagic.</i> | <i>Total.</i> |
|-------------------|------------------|------------------|---------------------|---------------|
| — | — | — | — | — |
| 24 | 3 | 38 | ... | 65 |

The deaths from all types were 21.

The following tables analyse these cases in particulars of type incident, monthly incidence, sexual, racial, age and death incidences.

TABLE B.

1919.

| <i>Vac. History.</i> | <i>Modified.</i> | <i>Discrete.</i> | <i>Confluent.</i> | <i>Hæmorrhagic.</i> | <i>Deaths.</i> |
|-------------------------|------------------|------------------|-------------------|---------------------|----------------|
| — | — | — | — | — | — |
| One Vac. Scar ... | ... | 3 | 1 | ... | 4 |
| Two „ ... | ... | ... | 2 | ... | 2 |
| Three „ ... | ... | ... | 2 | ... | 2 |
| Indistinct Mark ... | ... | ... | ... | ... | ... |
| Not Vaccinated ... | ... | 6 | 3 | ... | 9 |
| Recently Vaccinated ... | ... | ... | 4 | ... | 4 |
| Total ... | ... | 9 | 12 | ... | 21 |

TABLE B-b.

| <i>Vac. History.</i> | <i>Modified.</i> | <i>Discrete.</i> | <i>Confluent.</i> | <i>Hæmorrhagic.</i> | <i>Total.</i> |
|-------------------------|------------------|------------------|-------------------|---------------------|---------------|
| — | — | — | — | — | — |
| One Vac. Scar ... | ... | 4 | 1 | ... | 5 |
| Two „ ... | 1 | 11 | 2 | ... | 14 |
| Three „ ... | 2 | 7 | 5 | ... | 14 |
| Indistinct Mark ... | ... | 2 | 3 | ... | 5 |
| Not Vaccinated ... | ... | 13 | 9 | ... | 22 |
| Recently Vaccinated ... | ... | 1 | 4 | ... | 5 |
| Total ... | 3 | 38 | 24 | ... | 65 |

TABLE B-c.

DEATH-RATE 32'30 PER CENT.

| <i>Sex incidence.</i> | <i>No. of Cases.</i> | <i>No. of Deaths.</i> |
|-----------------------|----------------------|-----------------------|
| — | — | — |
| Total Males ... | 31 | 11 |
| Total Females ... | 34 | 10 |
| Total ... | 65 | 21 |

TABLE B-d.

| <i>Race incidence.</i> | <i>No. of Cases.</i> | <i>No. of Deaths.</i> |
|------------------------|----------------------|-----------------------|
| — | — | — |
| Chinese ... | 5 | 1 |
| Malays ... | 48 | 16 |
| Indians ... | 10 | 3 |
| Eurasians ... | 2 | 1 |
| Total ... | 65 | 21 |

TABLE B-e.

| <i>Age incidence.</i> | | <i>No. of Cases.</i> | <i>No. of Deaths</i> |
|-----------------------|-------|----------------------|----------------------|
| Under one year | ... | 2 | 2 |
| 1 to 5 years | ... | 10 | 4 |
| 5 to 15 | ... | 14 | 3 |
| 15 to 30 | ... | 29 | 8 |
| Over 30 | ... | 10 | 4 |
| | | | |
| | Total | 65 | 21 |

TABLE B-f.

| <i>Monthly incidence.</i> | | <i>No. of Cases.</i> | <i>No. of Deaths.</i> |
|---------------------------|-------|----------------------|-----------------------|
| January | ... | 1 | ... |
| February | ... | ... | ... |
| March | ... | 9 | 2 |
| April | ... | 4 | 1 |
| May | ... | 8 | 3 |
| June | ... | 10 | 4 |
| July | ... | 17 | 4 |
| August | ... | 7 | 2 |
| September | ... | 6 | 5 |
| October | ... | 2 | ... |
| November | ... | ... | ... |
| December | ... | 1 | ... |
| | | | |
| | Total | 65 | 21 |

Malaria.—Shewed 483 cases with death-rate of 7·03 per cent in 1919, against 492 cases and death-rate of 9·96 per cent in year 1918 as for Government Hospitals, against 344 cases and death-rate 1·16 per cent in year 1919 and 303 cases with death-rate of 1·65 per cent in 1918 for Estate Hospitals.

Ankylostomiasis.—In year 1919, 268 cases with death-rate 15·67 per cent occurred, against 194 cases and death-rate 23·71 per cent in 1918 in Government Hospitals. Estate Hospitals shew 36 cases with death-rate of 8·33 per cent for year 1919, against 118 cases and death-rate of 4·23 per cent in year 1918. I suspect the accuracy of estate figures and consider the year under review reveals an actual increase which was to be expected with corresponding increase in immigration. The systematic examination of all Government Hospital patients' stools for ova throughout the year demonstrates a high degree of infection with the hook-worm parasite.

Diarrhœa and Dystentery.—Government Hospitals treated 153 cases with death-rate of 27·45 per cent in 1919, against 105 cases and death-rate of 39·04 per cent in 1918. Estate Hospital figures are—195 cases with death-rate of 16·92 per cent for 1919, against 209 cases and death-rate of 17·70 per cent in 1918.

Phthisis.—In Government Hospitals shew 81 cases and death-rate 50·61 per cent in year 1919, against 50 cases and death-rate of 29 per cent in 1918. Estate Hospitals shew 31 cases and death-rate of 48·38 per cent in 1919, against 34 cases and death-rate of 44·12 per cent in 1918.

No doubt Influenza towards the end of 1918 left many weakened pulmonary organs to provide suitable habitates for the ubiquitous "tubercle bacillus".

Influenza accounted for 3 deaths out of 23 cases treated against 54 deaths out of 284 cases treated in 1918 in our hospitals. Either a milder strain of the original organism, another and milder causative organism, or acquired immunity accounts for the diminution in cases of this disease. It is to be noted that there was a decrease in 1919 of the number of wet days and total amount of rainfall as averaged over our four recording stations when compared with year 1918.

Veneral Disease.—Two hundred and thirty-seven cases were treated in 1919, against 222 in 1918 as in-patients; and 197 out-patients, against 156 in year 1918. Deaths amongst in-patients treated for such diseases equalled 5 in 1919, against 9 in 1918.

Galyl and Novarsenobillon were exhibited much more frequently in treatment of Syphilis during 1919, and with much more speedy and immediate beneficial results.

Population.—The estimated mean including all factors was 141,115 against 139,538 in year 1918, an increase of 1,577—this is accounted for by the larger number of immigrants and excess of births over deaths.

Births.—Four thousand three hundred and sixty-one against 4,109 in 1918, i.e., 30.89 per mille against 30.40 per mille in 1918.

Deaths amounted to 3,533 against 5,676 in 1918, i.e., 25.03 per mille against 42.08 per mille in 1918.

Infantile Mortality was 101.35 per mille against 125 per mille in 1918. These figures are fair considering how unskilled is the treatment meted out to these mites at and subsequent to birth.

Vaccination.—Primary operations—4,073 against 3,398 in 1918. Secondary efforts yielded 2,842 in 1919 against 7,077 in 1918;—the decrease in 1919 is due to lessened cause for such in the shape of fewer outbreaks of small-pox

TABLE C.

Table of Births and Primary Vaccinations for last 5 years:—

| Year. | Births Recorded. | Vaccination. | Ratio. |
|-------|------------------|--------------|--------|
| 1915 | 4,359 | 3,784 | 86.80 |
| 1916 | 4,180 | 3,576 | 80.76 |
| 1917 | 4,484 | 3,645 | 81.29 |
| 1918 | 4,100 | 3,307 | 80.48 |
| 1919 | 4,361 | 3,873 | 94.25 |

Rainfall.—The mean total rainfall of our four Government recording stations was 1927.03 millimetres against 1977.06 millimetres in 1918. The driest months were—June for Penaga with no rain, January for Butterworth with 40.08 millimetres and Sungei Bakap with 61 millimetres and February for Bukit Mertajam with 46 millimetres.

Wettest months were:—May for Butterworth with 382.50 millimetres, October for Bukit Mertajam with 376.50 millimetres, December for Sungei Bakap with 425.5 millimetres and April for Penaga Station with 262 millimetres.

Microscopy.—The stools of all inpatients were examined for the eggs of helminths, and Sungei Bakap Hospital found 82 per cent of infection, Bukit Mertajam Hospital 16.94 per cent and Butterworth Hospital 3.72 per cent of infection with ova of hookworms.

A systematic examination of blood films which were taken from all cases irrespective of the disease from which they were suffering gave Butterworth Hospital with Malarial parasites in 79 instances and Malarial Fevers treated equalled 103 cases; Bukit Mertajam Hospital with parasites in 42 instances

(mostly Benign Tertian) and Malarial fevers treated equalled 121; Sungei Bakap Hospital with parasites in 20 instances and Malarial fevers treated equalled 61 cases.

Water Supply.—The Bukit Serayah and Bukit Panchor Reservoirs were maintained in good order.

The increasing demand for water from the reservoir at Bukit Serayah makes it difficult to maintain a sufficient water supply even for domestic purposes.

Estimate and plans were got out for new pipe line to Prai and Butterworth of a larger bore than the existing pipes.

During the month of November a serious accident happened to the Prai Syphon. A steam tug dragged its anchor and broke the syphon. Service to Butterworth was interrupted for 20 days during which time water was supplied by boat from Penang. The tank and water jetty at Butterworth erected in 1918 proving invaluable in this emergency.

Irrigation and Drainage Channels.—The Muda and Krian River Bunds were maintained in good order. A sum of \$5,000 was spent in strengthening the Muda River Bund near Pinang Tunggal during the year.

Over twelve miles of drainage channels were cleared and deepened departmentally and by contract.

A water gate was constructed at Tassek Junjong in Simpang Ampat District.

Sanitation.—No new works of importance were carried out but existing village drains and sanitary works were maintained in good order.

Surgical measures in treatment totalled 407 against 278 in year 1918. I append a compiled table of such for our three hospitals.

TABLE D.
Annual Return of Operations for the Year 1919 for Province Wellesley Hospitals.

| Names of Operations. | Butterworth Hospital. | | | | Bukit Mertajam Hospital. | | | | Sungei Bakap Hospital. | | | | Summary. | | | |
|---------------------------------------|-----------------------|--------|-----------|-------|--------------------------|--------|-----------|-------|------------------------|--------|-----------|-------|----------|--------|-----------|-------|
| | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. |
| <i>On Tumours:—</i> | | | | | | | | | | | | | | | | |
| Excision of Cyst ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 2 | 2 | ... | ... | 3 | 3 | ... | ... |
| Excision of Lepoma ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| <i>On Abscess and Cellulitis:—</i> | | | | | | | | | | | | | | | | |
| Incision for Abscess ... | 13 | 13 | ... | ... | 23 | 23 | ... | ... | 11 | 11 | ... | ... | 47 | 47 | ... | ... |
| Incision for Cellulitis ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 3 | 3 | ... | ... | 4 | 4 | ... | ... |
| <i>On Aneurysm:—</i> | | | | | | | | | | | | | | | | |
| Excision of Sac ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| <i>On Veins:—</i> | | | | | | | | | | | | | | | | |
| Intravenous injection of U. A. B. ... | 35 | 35 | ... | ... | 13 | 8 | 5 | ... | 10 | 10 | ... | ... | 58 | 53 | 5 | ... |
| Intravenous injection of Galyl ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| <i>For Arrest of Hemorrhage:—</i> | | | | | | | | | | | | | | | | |
| Ligature of Artery ... | 2 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | ... | ... |
| <i>On Lymphatics:—</i> | | | | | | | | | | | | | | | | |
| Enucleation of glands ... | ... | ... | ... | ... | 6 | 6 | ... | ... | 13 | 13 | ... | ... | 19 | 19 | ... | ... |
| <i>Carried forward ...</i> | 53 | 53 | ... | ... | 44 | 39 | 5 | ... | 39 | 39 | ... | ... | 136 | 131 | 5 | ... |

TABLE D.—Continued
 Annual Return of Operations for the Year 1919 for Province Wellesley Hospitals.

| Names of Operations. | Butterworth Hospital. | | | Bukit Mertajam Hospital. | | | Sungei Bakap Hospital. | | | Summary. | | |
|--|-----------------------|--------|-----------|--------------------------|--------|--------|------------------------|-------|--------|----------|-----------|-------|
| | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. |
| <i>Brought forward</i> ... | 53 | 53 | ... | ... | 39 | 39 | ... | ... | 136 | 131 | 5 | ... |
| <i>On the Skin and subcutaneous tissue:—</i> | | | | | | | | | | | | |
| Suturing of Wounds ... | 64 | 64 | ... | ... | 37 | 36 | ... | 1 | 148 | 147 | ... | 1 |
| Scraping of Ulcers ... | 2 | 2 | ... | ... | 1 | 1 | ... | ... | 18 | 18 | ... | ... |
| Curetting of Sinus ... | ... | ... | ... | ... | 3 | 3 | ... | ... | 3 | 3 | ... | ... |
| Removal of toe nail ... | ... | ... | ... | ... | 2 | 2 | ... | ... | 2 | 2 | ... | ... |
| Removal of foreign body ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | 1 | ... | ... |
| <i>On Bones:—</i> | | | | | | | | | | | | |
| Removal of Sequestra ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 2 | 1 | 1 | ... |
| <i>On Injuries:—</i> | | | | | | | | | | | | |
| Setting of fractures ... | 3 | 2 | ... | 1 | 1 | 1 | ... | ... | 6 | 5 | ... | 1 |
| <i>On Joints:—</i> | | | | | | | | | | | | |
| Reduction of Dislocation ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| Aspiration of Knee ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| <i>Amputations:—</i> | | | | | | | | | | | | |
| Amputation of leg ... | 1 | ... | 1 | ... | 1 | 1 | ... | ... | 2 | 1 | 1 | ... |
| Amputation of finger ... | 5 | 5 | ... | ... | ... | ... | ... | ... | 5 | 5 | ... | ... |
| Amputation of hand ... | 2 | 2 | ... | ... | ... | ... | ... | ... | 2 | 2 | ... | ... |
| Amputation of forearm ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| Amputation of toe ... | 1 | 1 | ... | ... | 1 | 1 | ... | ... | 3 | 3 | ... | ... |
| <i>Carried forward</i> ... | 134 | 132 | 1 | 1 | 91 | 85 | 5 | 1 | 331 | 322 | 7 | 2 |

TABLE D.—Continued.
Annual Return of Operations for the Year 1919 for Province Wellesley Hospitals.

| Names of Operations. | Butterworth Hospital. | | | | Pukit Mertajam Hospital. | | | | Sungei Bakap Hospital. | | | | Summary. | | | |
|--|-----------------------|-------------|-----------------|-------|--------------------------|-------------------|-----------------|-------|------------------------|-----------------|-------------------|-------|--------------|-------------|-----------------|-----------------|
| | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. |
| <i>Brought forward</i> ... | 134 | 132 | 1 | 1 | 91 | 85 | 5 | 1 | 106 | 105 | 1 | ... | 331 | 322 | 7 | 2 |
| <i>On the Brain:—</i> Removal of broken bone in Brain | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| <i>On the Eye:—</i> Removal of Hypopyunpus from Austerior Chamber | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| <i>Dental Operation:—</i> Extraction of teeth ... | 4 | 4 | ... | ... | 1 | 1 | ... | ... | 2 | 2 | ... | ... | 7 | 7 | ... | ... |
| <i>On the Ear:—</i> Mastoid operation ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| <i>On the Thorax:—</i> Tubing and Drainage for pen- etrating wd. Lungs Paracentesis of Pleura | 1 | ... | ... | 1 | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | 1 | ... | 1 |
| <i>On the Abdomen:—</i> Paracentesis abdominis Laparotomy Herniatomy | 3 1 5 | 3 1 4 | 3 | ... | 5 | | 5 | ... | 9 | 9 | | ... | 17 1 5 | 9 1 4 | 8 | 1 |
| <i>Carried forward</i> ... | 149 | 142 | 4 | 3 | 99 | 88 | 10 | 1 | 118 | 117 | 1 | ... | 366 | 347 | 15 | 4 |

TABLE D.—Continued.
Annual Return of Operations for the Year 1919 for Province Wellesley Hospitals.

| Names of Operations. | Butterworth Hospital. | | | | Bukit Mertajam Hospital. | | | | Sungei Bakap Hospital. | | | | Summary. | | | |
|--|-----------------------|--------|-----------|-------|--------------------------|--------|-----------|-------|------------------------|--------|-----------|-------|----------|--------|-----------|-------|
| | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. | Total. | Cured. | Relieved. | Died. |
| <i>Brought forward</i> ... | 149 | 142 | 4 | 3 | 99 | 88 | 10 | 1 | 118 | 117 | 1 | ... | 366 | 347 | 15 | 4 |
| <i>On the Liver:</i> — Aspiration of Hepatic abscess ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... |
| <i>On the Urethra:</i> — Dilatation of Stricture ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | ... | 1 | ... | 1 | ... |
| Catheterisation ... | 1 | 1 | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | 2 | 1 | 1 | ... |
| <i>On Anus:</i> — Ligature of Piles ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 3 | 3 | ... | ... | 4 | 4 | ... | ... |
| <i>On the Urethra and Bladder:</i> — External urethrotomy and supra- pubic Cystotomy ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | 1 |
| <i>On Male generative organs:</i> — Circumcision ... | 9 | 9 | ... | ... | 4 | 4 | ... | ... | 8 | 8 | ... | ... | 21 | 21 | ... | ... |
| Radical cure of Hydrocele ... | 3 | 3 | ... | ... | ... | ... | ... | ... | 4 | 4 | ... | ... | 7 | 7 | ... | ... |
| " Hamatocele ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | 1 | ... | ... |
| Excision of Sloughing Scrotum ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | 1 | ... | ... |
| <i>Obstetric:</i> — Forceps Delivery ... | ... | ... | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | 1 | ... | ... | 1 |
| Transverse presentation of child ... | ... | ... | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | ... | ... |
| TOTAL ... | 165 | 156 | 5 | 4 | 106 | 93 | 11 | 2 | 136 | 134 | 2 | ... | 407 | 383 | 18 | 6 |

Health Work.—These duties were undertaken by myself in addition; and villages and estates came in for periodic visitations. Quarterly reports were submitted during the year for estate work and generally speaking the health of and sanitary condition under which coolies live on estates have been satisfactory. Date of their principal ailments have been already stated in this report. During the latter half of the year a monthly return of sick on the prescribed form D 205 has been submitted me by estates not possessing their own hospitals, it testifies to the well being of the coolies. Penaga Wireless Station continued to provide a fair amount of Malaria, amongst its occupants and a certain amount of interference to the smooth running of such concern; as a consequence a special report called for and submitted by me to the Chief Medical Officer, Penang, on May the 9th 1919. It shewed that the site though possibly well chosen from a telegraphy—had been ill-selected from our point of view.

Penaga District is a well irrigated area with good paddy cultivation for a native pursuit, and the land all round the station for months is water logged. I found the *Nyssomyzomia Ludlowii* and the *Myzorhynchus barbirostris* to be the most prevalent species of anophelinæ round about. The former is the common Malaria carrier of this coastal zone, in my opinion.

Hospital and Dispensaries.—I have already given figures shewing the past three years working. The main feature is the falling off of the out-door dispensary figures, and I believe such to be due to the more straightened circumstances of living amongst the class who patronise such. The in-patients though smaller than those for the year 1918 are in reality well up to and above the average excluding the influenzal admissions of 1918.

Revenue.—Collections made under Hospital Board account excluding in both years amounts paid by cheque directly to the Chief Medical Officer, Penang, come to \$1,886.76 in 1919, and to \$2,310.98 in 1918. Amounts paid by cheque direct to the Chief Medical Officer, Penang, for the year 1919 amount to \$1,020.24.

Staff.—The changes amongst the subordinate officers have been mentioned in the individual working reports of the 3 hospitals which accompany this report. I have been in charge of the department throughout the year.

BUTTERWORTH HOSPITAL.

Grounds and Buildings.—The ground has been in good order throughout the year. The roof of the Assistant Surgeon's kitchen was retiled about the beginning of the year. Requisitions were sent from time to time to the Public Works Department for certain minor works and repairs. The Hospital Buildings were repainted inside and out, and a lavatory improved.

Staff.—Assistant Surgeon Mr. MOHAMED BABOO, who was stationed at Butterworth Hospital from the beginning of the year, was transferred to Dindings on the 1st July, 1919. His place was taken by Mr. R. LETCHMANASAMY (from Dindings) on the 3rd July, 1919.

Work done.—(a) 52 patients remained from the previous year, which with 1,370 admissions during the year, makes a total of 1,422 cases treated for the year as against 1,265 for the previous year. The average daily number of sick for 1919 was 57.88 as against 52.81 for 1918. Number or deaths to total treated was 94 as against 110 for the previous year. Percentage of deaths to total treated was 6.61 as against 8.69 for 1918. There were 13 deaths within 48 hours of admission. Percentage of deaths to total treated, excluding those dying within 48 hours of admission was 5.03 as against 7.15 in 1918. 49 patients remained at the end of 1919.

(b) The principal diseases treated were as follows:—

| | |
|----------------------------|-----|
| Dysentery | 36 |
| Malaria | 103 |
| Small-pox | 35 |
| Syphilis, Secondary | 96 |
| Phthisis | 41 |
| Diarrhœa | 24 |
| Ankylostomiasis | 58 |
| Scabies | 26 |
| Cholera | 4 |
| Nephritis | 25 |
| Bronchitis | 16 |
| Asthma | 14 |
| Gonorrhœa | 15 |
| Pneumonia | 14 |
| Chancroid | 18 |
| Adenitis | 12 |
| Influenza | 9 |

(c) A systematic examination of the stools of patients, admitted into hospital was carried on during the year. Of these 51 cases of Hook-worm ova, 8 cases of Round-worm ova, 9 cases of Whip-worm ova, and three cases of Amœbæ could be demonstrated.

(d) Of the blood films examined, 52 proved to be Benign Tertian, 1 Quartan and 26 Malignant Tertian.

(e) One hundred and sixty-five operations were performed during the year, of which 156 were cured, 5 relieved, and 4 died.

(f) Twenty-two necropsies were performed during the year, of which 12 cases (dead bodies) were sent in by the Police.

(g) One hundred and twenty-seven cases of venereal disease were treated during 1919, as against 96 cases in 1918.

Medico-legal.—Twelve dead bodies were sent in by the Police for Post-mortem examination. Number of Police cases treated totalled 181. Of these 92 were admitted into hospital and the remainder (89) were treated as out-patients. 18 Mental cases were sent in by the Police for observation.

Number of Police recruits examined during the year was 40, of which 6 were rejected.

Infectious Diseases.—Small-pox was prevalent, in the Northern District between the months of March and August. During September and October there were only a few sporadic cases. Total number of Small-pox cases were 35 and the deaths 10.

The number of Chicken-pox cases was 3 with no deaths.

Cholera.—Two cases occurred at Prye Estate, during the month of May. Both died. One case again occurred at Telaga Ayer during June, and this also died. During July there was a small outbreak at Prai, Northern District, and as these cases with contacts were carefully isolated and every possible means taken to prevent the spread, it subsided by the end of August.

Nine cases only of Influenza were treated for the year 1919.

BUKIT MERTAJAM HOSPITAL.

Buildings.—During the year nothing of importance was done except for a few minor repairs and whitewashing.

Work.—The following figures briefly show the work done during the year:—

| | | | |
|---|-----|-----|-------|
| Patients remaining from 1918 ... | ... | ... | 30 |
| Admitted during the year ... | ... | ... | 690 |
| Total treated ... | ... | ... | 720 |
| Average daily number of sick ... | ... | ... | 36.07 |
| Discharged ... | ... | ... | 611 |
| Transferred ... | ... | ... | 1 |
| Absconded ... | ... | ... | 25 |
| Died ... | ... | ... | 83 |
| Remained at the end of the year ... | ... | ... | 37 |
| Percentage of deaths to total treated ... | ... | ... | 11.52 |
| Died within 48 hours of admission ... | ... | ... | 18 |

The number of paying patients was 104 as compared to 82 of the previous year, and the number of estate coolies treated was 122 as compared with 106 of last year.

The principal diseases treated with number of deaths were as follows:—

| Diseases. | Number of cases. | Number of deaths. | Percentage of mortality. |
|---------------------|------------------|-------------------|--------------------------|
| Ankylostomiasis ... | 99 | 23 | 23.2 |
| Influenza ... | 6 | 1 | 16.6 |
| Diarrhœa ... | 12 | 3 | 25 |
| Dysentery ... | 30 | 8 | 26.6 |
| Gonorrhœa ... | 8 | ... | ... |
| Soft Chancre ... | 10 | ... | ... |
| Phthisis ... | 24 | 12 | 50 |
| Malaria ... | 121 | 9 | 7.4 |
| Nephritis ... | 12 | 2 | 16.66 |
| Pneumonia ... | 7 | 2 | 28.57 |
| Syphilis ... | 37 | 6 | 16.2 |
| Small-pox ... | ... | ... | ... |
| Chicken-pox ... | 8 | ... | ... |
| Measles ... | 1 | ... | ... |
| Wounds ... | 76 | 2 | 2.6 |
| Cholera ... | 1 | 1 | 100 |
| Leprosy ... | 2 | 1 | 50 |

Stools of all admissions were examined, out of 720 such 122 contained ova of hook-worm, 10 ova of round-worm and 4 had amœba histolyticat.

The blood of all patients was examined, out of 720 cases, 42 films were positive showing parasites mostly Benign Tertain. Eight post-mortems were done during the year.

Infectious Diseases.—During the year there were 14 cases of Small-pox and 8 cases of Chicken-pox. All Small-pox cases were sent to Butterworth Quarantine Camp. There were two small-pox prosecutions, one was discharged, the other was fined \$5. In the case of one Chicken-pox prosecution a fine of \$10 was imposed. There was also a case of Cholera brought to Bukit Mertajam by a train from Kedah which ended fatally.

Medico-legal.—(a) The Coroner sent in 14 bodies for post-mortem examination.

(b) The Police sent in 95 cases for examination and treatment.

(c) The Magistrate sent in 3 mental cases for observation.

Mr. METHA was Assistant Surgeon from the beginning of the year up to the 8th April, 1919, when he went on leave being relieved by Mr. SARAVANAMUTHOO, Mr. METHA returned and resumed duty on 18th May, 1919. Mr. MOHAMED BABOO took over from the latter from October 6th 1919. There were no changes among the dressers during the year.

SUNGEI BAKAP HOSPITAL.

Buildings and Grounds.—The buildings have been in a good state of repair throughout the year, with extensive repairs to Quarantine Camp.

Staff.—Assistant Surgeon Mr. METHA was in sub-charge throughout the year. The health of the staff has been fairly good throughout the year.

Work done.—There were 29 patients remaining at the beginning of the year, during the year 764 patients were admitted making a total of 793 cases treated against 962 of the preceding year. The average daily number of sick during the year was 42.28 as against 41.60 of the preceding year; the percentage of deaths to total treated was 12.86 as against 13.81 of the preceding year; there were 29 deaths within 48 hours of admission; the percentage of deaths comes down to 9.55 after excluding those who died within 48 hours of admission. The falling off in the number of patients admitted during the year is explained by the fact that it has been a comparatively healthy year and that there were practically no epidemic diseases in the district. Thirty-eight patients remained in hospital at the end of the year.

The principal diseases treated with deaths and percentage of mortality from each are as follows:—

| Diseases. | Number of cases. | Number of deaths. | Percentage of mortality. |
|---------------------------|------------------|-------------------|--------------------------|
| Anæmia | ... | ... | ... |
| Ankylostomiasis | 57 | 9 | 15.79 |
| Beri-beri | 12 | 2 | 16.66 |
| Cholera | ... | ... | ... |
| Diarrhœa & Enteritis | 18 | 7 | 38.88 |
| Dysentery | 33 | 14 | 42.42 |
| Enteric Fever | ... | ... | ... |
| Gonorrhœa | 16 | ... | ... |
| Influenza | 8 | 2 | 25 |
| Leprosy | 5 | ... | ... |
| Malaria | 170 | 24 | 14.11 |
| Nephritis | 6 | 1 | 25 |
| New-growth (Malignant) | 1 | ... | ... |
| Pneumonia | 5 | 2 | 40 |
| Small-pox | ... | ... | ... |
| Soft Chancre | 5 | ... | ... |
| Syphilis | 34 | 2 | 5.88 |
| Tuberculosis | 18 | 8 | 44.44 |
| Valvular Disease of Heart | 16 | 10 | 62.56 |
| Injuries and Wounds | 98 | 4 | 4.68 |
| Yaws | 2 | ... | ... |

In all cases the blood and the stools of patients were examined, 33 per cent showed the presence of Malarial parasites, and 82 per cent presence of hook-worm ova in their stools.

Eighteen necropsies were performed during the year on patients dying in the hospital.

One hundred and thirty-six operations mostly minor were performed during the year.

Medico-legal.—The Coroner sent in 34 dead bodies for post-mortem examination. The Police sent in 162 cases for examination or treatment including 14 for observation of insanity, and 5 for Leprosy. Accident cases not sent by the Police amounted to 32. Medical evidence was given in the Courts on 31 occasions.

Vaccination, Primary:—There were 910 primary vaccinations performed during the year of which 720 were perfect, 122 modified, 43 failed and 25 not seen, the percentage of perfect vaccination was 68·13, and of failures 4·72.

Secondary.—Only 29 re-vaccinations were done during the year as there was no epidemic of small-pox in the district. No prosecutions took place and no fines were imposed by the Courts.

Police.—Fifty-two Police Constables were admitted during the year, the health of the force has been fairly good.

Rainfall.—The total rainfall during the year was 2,139·5 millimetres, the mean monthly rainfall was 178·25 millimetres, the greatest rainfall in any one day was 91·5 millimetres on April 9th and the wettest month was December with a fall of 425·5 millimetres, the driest month was January with a fall of only 61 millimetres.

Public Health.—There was no epidemic of small-pox in the district throughout the year. Only one case was reported early in the year from Caledonia Estate, every precaution was taken to prevent the spread of the disease and no other cases occurred; there were only three cases of chicken-pox reported, one on Batu Kawan Estate, one on the Bakap Plantations, and one on the Val D'or. Six cases of Cholera were reported throughout the year, one on Batu Kawan Estate ending fatally within 24 hours of attack, and five on Bakap Plantations of which three died. Two cases of Enteric Fever were reported, one from Caledonia Estate Hospital ending fatally, and one from Val D'or Estate (Section 2 Lines) the patient recovering. One fatal case of puerperal Sepsis was reported from Batu Kawan Estate, and one case of Erisipelas from Caledonia Estate Hospital. There was no epidemic of Influenza during the year, but a few sporadic cases of a mild type were seen.

APPENDIX D.

MALACCA HOSPITALS.

REPORT BY DR. J. R. McVAIL, M.B., CH.B. (GLAS.), *Chief Medical Officer.*

The population is made up as follows:—

| | | | | | |
|------------|-----|-----|-----|------------------|----------------|
| Europeans | ... | ... | ... | ... | 375 |
| Eurasians | ... | ... | ... | ... | 1,898 |
| Chinese | ... | ... | ... | ... | 43,729 |
| Malays ... | ... | ... | ... | ... | 97,223 |
| Indians | ... | ... | ... | ... | 9,254 |
| Others ... | ... | ... | ... | ... | 529 |
| | | | | Total ... | 153,008 |

Births.—There were 5,934 births in 1919 as against 5,300 in 1918 and 5,862 in 1917.

The following table shows the nationalities:—

| | | <i>Males.</i> | <i>Females.</i> | <i>Total.</i> |
|--------------|-----|---------------|-----------------|---------------|
| Europeans | ... | 5 | 2 | 7 |
| Eurasians | ... | 49 | 37 | 86 |
| Chinese | ... | 630 | 594 | 1,224 |
| Malays | ... | 2,133 | 1,987 | 4,120 |
| Indians | ... | 162 | 167 | 329 |
| Others | ... | 85 | 83 | 168 |
| Total | ... | 3,064 | 2,870 | 5,934 |

The birth-rate per mille was 38·78.

Deaths.—Four thousand nine hundred and seventy deaths were registered as contrasted with 7,633 in 1918 and 7,111 in 1917.

| | | <i>Males.</i> | <i>Females.</i> | <i>Total.</i> |
|--------------|-----|---------------|-----------------|---------------|
| Europeans | ... | 4 | 1 | 5 |
| Eurasians | ... | 27 | 16 | 43 |
| Chinese | ... | 1,410 | 375 | 1,785 |
| Malays | ... | 1,254 | 1,134 | 2,388 |
| Indians | ... | 452 | 218 | 670 |
| Others | ... | 52 | 27 | 79 |
| Total | ... | 3,199 | 1,771 | 4,970 |

Comparing the death-rate for 1919 with those of 1918, etc.:—

| | | | | |
|------------------------|-----|-----|-----|-------|
| Death-rate 1919 | ... | ... | ... | 32·48 |
| „ 1918 | ... | ... | ... | 50·04 |
| „ 1917 | ... | ... | ... | 48·97 |
| „ 1916 | ... | ... | ... | 37·38 |
| „ 1915 | ... | ... | ... | 36·14 |

Five hundred and thirty-nine of these deaths occurred in hospital, 65 were certified by Registered Medical Practitioners, 1,000 were certified after death and 3,366 were not certified.

Vaccinations.—As in previous years, vaccinations were pushed on vigorously with the satisfactory result that small-pox was kept out of Malacca.

| | | | | |
|-----------|-----|-----|-----|-------|
| January | ... | ... | ... | 804 |
| February | ... | ... | ... | 812 |
| March | ... | ... | ... | 838 |
| April | ... | ... | ... | 2,332 |
| May | ... | ... | ... | 2,303 |
| June | ... | ... | ... | 1,357 |
| July | ... | ... | ... | 2,098 |
| August | ... | ... | ... | 1,422 |
| September | ... | ... | ... | 1,540 |
| October | ... | ... | ... | 1,081 |
| November | ... | ... | ... | 1,168 |
| December | ... | ... | ... | 1,189 |

I append a table showing the nationalities thus vaccinated. "A."

Municipality.—The estimated population for the Municipality for 1919 is 27,303.

There were 887 births and 969 deaths within the Municipal limits. Malaria as in previous years easily accounted for most deaths, viz., 253. Most of these cases contracted their disease outside Municipal limits in rubber and other estates and returned to their houses or to the Hospital for treatment or to die. Convulsion accounted for the second largest number of deaths.

The deaths were made up as follows:—

| | | | | | |
|-----------------|-----|-----|------------|-------|----------|
| Malarial Fever | ... | 253 | as against | 402 | in 1918. |
| Convulsion | ... | 157 | " | 182 | " |
| Fever | ... | 142 | " | 150 | " |
| Phthisis | ... | 85 | " | 102 | " |
| Old Age | ... | 51 | " | 74 | " |
| Tetanus | ... | 33 | " | 32 | " |
| Marasmus | ... | 39 | " | 44 | " |
| Beri-beri | ... | 27 | " | 53 | " |
| Pneumonia | ... | 43 | " | 225 | " |
| Bronchitis | ... | 14 | " | 44 | " |
| Dysentery | ... | 8 | " | 34 | " |
| Enteritis | ... | 9 | " | 3 | " |
| Premature birth | ... | 15 | " | 12 | " |
| Still-born | ... | 18 | " | 32 | " |
| Nephritis | ... | 17 | " | 15 | " |
| Diarrhoea | ... | 12 | " | 16 | " |
| Ankylostomiasis | ... | 4 | " | 83 | " |
| Debility | ... | 4 | " | 1 | " |
| Child birth | ... | 3 | " | 7 | " |
| Other causes | ... | 35 | " | 50 | " |
| Total | ... | 969 | | 1,561 | |

The death per mille was thus:—35.49 as against 61.47 in 1918.

DURIAN DAUN HOSPITAL.

Ground and Buildings.—Both have been in good order during the year. The new 2nd Class ward is almost completed. The Hospital kitchen for Tamil patients has been enlarged. There have been various minor repairs to the wards and outhouses as well as painting and whitewashing.

Staff.—There have been no changes amongst the Assistant Surgeons and the dressers. Miss J. SINCLAIR, the Acting Matron, resigned in the month of February and Miss E. F. FLETCHER from Penang replaced her. Nurses Miss H. P. ANGUS took the place of Mrs. V. A. TOWERS who resigned in the month of January. The probationer nurse Miss A. TISSEMAN from Singapore relieved Mrs. HAYMAN who went back to Singapore in the month of May. Nurse Miss D. DYMOND remained unchanged. The services of a temporary nurse Mrs. WESTON were taken in the month of November to relieve nurses on sick or vacation leave.

General Wards.

Work done:—

| | | | |
|---|-----|-----|-------|
| Remained on 31st December, 1918 | ... | ... | 60 |
| Admitted during 1919 | ... | ... | 1,404 |
| Discharged during 1919 | ... | ... | 1,225 |
| Transferred during 1919 | ... | ... | 38 |
| Absconded during 1919 | ... | ... | 10 |
| Died during 1919 | ... | ... | 117 |
| Remaining on 31st December, 1919 | ... | ... | 74 |
| Average daily number of sick | ... | ... | 48.41 |
| Number of deaths within 48 hours of admission | ... | ... | 32 |
| Percentage of deaths to total treated | ... | ... | 7.99 |
| Percentage excluding those dying within 48 hours of admission | ... | ... | 5.93 |

The number of European patients admitted during the year was 83 males and 26 females as compared with 118 males and 28 females in the previous year.

There were 3 deaths, two from Malaria and one from accidental bullet wounds of the large intestine. The Quarantine Camp was occupied for a few days by 5 cases of chicken-pox and an imported case of cholera.

The principal diseases treated with the mortality were as follows:—

| | | | | |
|----------------------|-----|-----|---------------|-----------|
| Ankylostomiasis | ... | ... | 78 cases with | 19 deaths |
| Beri-beri | ... | ... | 47 " | 7 " |
| Black Water Fever | ... | ... | 1 case | no " |
| Broncho Pneumonia | ... | ... | 8 cases | " " |
| Cirrhosis Liver | ... | ... | 4 " | 1 death |
| Dysentery | ... | ... | 76 " | 21 deaths |
| Gonorrhœa | ... | ... | 21 " | no " |
| Leprosy | ... | ... | 8 " | " " |
| Malaria | ... | ... | 199 " | 24 " |
| Nephritis | ... | ... | 3 " | 1 death |
| New Growth Malignant | ... | ... | 3 " | no deaths |
| Pneumonia, Lobar | ... | ... | 39 " | 11 " |
| Soft Chancre | ... | ... | 7 " | no " |
| Syphilis | ... | ... | 24 " | 2 " |
| Tuberculosis | ... | ... | 23 " | 7 " |
| Ulcers | ... | ... | 52 " | no " |
| Wounds | ... | ... | 79 " | 11 " |

Pauper Wards.

Work done:—

| | | | |
|----------------------------------|-----|-----|-------|
| Remained on 31st December, 1918 | ... | ... | 127 |
| Admitted during the year 1919 | ... | ... | 1,676 |
| Discharged | ... | ... | 1,323 |
| Transferred | ... | ... | 1 |
| Absconded | ... | ... | 18 |
| Died | ... | ... | 348 |
| Remaining on 31st December, 1919 | ... | ... | 113 |

The average daily number of sick was 148·07.

The percentage of deaths to total treated was 19·30.

Number of deaths within 48 hours of admission was 54.

The percentage of deaths to total treated excluding those dying within 48 hours of admission was 16·80.

The principal diseases treated with mortality were as follows:—

| | | | | |
|-----------------------|-----|-----|----------------|-----------|
| Ankylostomiasis | ... | ... | 247 cases with | 69 deaths |
| Beri-beri | ... | ... | 261 " " | 51 " |
| Broncho Pneumonia | ... | ... | 2 " " | no " |
| Cirrhosis Liver | ... | ... | 19 " " | 12 " |
| Diarrhœa | ... | ... | 13 " " | 4 " |
| Dysentery | ... | ... | 117 " " | 68 " |
| Gonorrhœa | ... | ... | 22 " " | no " |
| Leprosy | ... | ... | 4 " " | 3 " |
| Malaria | ... | ... | 285 " " | 42 " |
| Nephritis | ... | ... | 10 " " | 4 " |
| New growth, malignant | ... | ... | 11 " " | no " |
| Pneumonia, Lobar | ... | ... | 24 " " | 9 " |
| Soft Chancre | ... | ... | 10 " " | no " |
| Syphilis | ... | ... | 100 " " | 4 " |
| Tuberculosis | ... | ... | 98 " " | 53 " |
| Ulcers | ... | ... | 191 " " | no " |
| Wounds | ... | ... | 24 " " | no " |
| Yaws | ... | ... | 1 case | no " |

REPORT ON SURGERY DURING THE YEAR 1919.

There were 495 operations performed during the year with two deaths. Dr. J. W. ADAMS and Dr. J. R. McVAIL were the Surgeons-in-charge during the year. The list of surgical operations were as follows:—

| Surgical Operations. | Number of cases. | Number of deaths. |
|--------------------------------------|------------------|-------------------|
| <i>On Tumours:—</i> | | |
| Excision of new growth non-malignant | 2 | ... |
| <i>For Abscess and Cellulity:—</i> | | |
| Incision and drainage for abscess | 39 | ... |
| Incision for Cellulitis | 7 | ... |
| <i>On Veins:—</i> | | |
| Injection of Novarsenobensol | 69 | ... |
| Injection of Quinine solution | 16 | ... |
| <i>Foreign bodies:—</i> | | |
| Removal of foreign bodies | 3 | ... |
| <i>On Lymphatics:—</i> | | |
| Excision of enlarged glands | 4 | ... |
| Incision and drainage for sulp: bubo | 20 | ... |
| <i>On Skin:—</i> | | |
| Incisions for carbuncle | 1 | ... |
| Suturing of wounds | 217 | ... |
| Curetting of ulcers | 6 | ... |
| <i>On Bone:—</i> | | |
| Sequestrotomy | 2 | ... |
| <i>On Joint:—</i> | | |
| Aspiration of joint | 1 | ... |
| <i>Carried forward</i> | 387 | ... |

| Surgical Operations. | Number of cases. | Number of deaths. |
|--|------------------|-------------------|
| <i>Brought forward</i> ... | 387 | ... |
| <i>On muscles, etc.:—</i> | | |
| Union of tendons | 6 | ... |
| <i>Amputation:—</i> | | |
| Amputation of thigh for injuries | 2 | ... |
| " arm for injuries | 1 | ... |
| " fingers for injuries | 4 | ... |
| <i>On Skull:—</i> | | |
| Trephining of skull for extra dural haemorrhage | 1 | ... |
| Elevation of depressed bone, skull | 2 | ... |
| <i>On Spine:—</i> | | |
| Lumbar puncture | 4 | ... |
| <i>On Face:—</i> | | |
| Plastic operation for harelip | 1 | ... |
| <i>On Eye:—</i> | | |
| Extraction of lens for cataract | 2 | ... |
| Excision of eyeball | 2 | ... |
| <i>Dental Operation:—</i> | | |
| Extraction of teeth | 12 | ... |
| <i>On Ear:—</i> | | |
| Plastic Operation for Auricular Fissure | 1 | ... |
| <i>On Thorax:—</i> | | |
| Paracentesis pleura | 12 | ... |
| Resection of ribs and drainage for Empyema | 2 | 1 |
| <i>On Abdomen:—</i> | | |
| Paracentesis Abdominis | 17 | ... |
| Gastrorrhaphy | 1 | ... |
| Laparotomy for intestinal obstruction | 1 | 1 |
| Herniotomy | 2 | ... |
| Radical cure for Inguinal Hernia | 3 | ... |
| <i>On Arms:—</i> | | |
| Ligature of Hæmorrhoids | 1 | ... |
| <i>On Bladder:—</i> | | |
| Suprapubic Lithotomy | 1 | ... |
| <i>On Urethra:—</i> | | |
| Suturing of ruptured urethra | 1 | ... |
| Dilatation of Stricture | 4 | ... |
| Removal of Urethral Calculus | 1 | ... |
| <i>On Male generative organs:—</i> | | |
| Circumcision | 8 | ... |
| Amputation of Penis for Malg: growth | 1 | ... |
| Excision of Scrotum | 1 | ... |
| Radical cure for Hydrocele | 6 | ... |
| <i>On Female generative Organs:—</i> | | |
| Removal of foetus, etc., in ectopic gestation | 2 | ... |
| <i>Obstetric Operations:—</i> | | |
| Application of forceps | 2 | ... |
| Craniotomy | 1 | ... |
| Manual Extraction of retained Placenta | 3 | ... |
| Total ... | 495 | 2 |

Forty-nine necropsies were held on the bodies of patients dying in the Hospital.

Medico-Legal.—The Coroner sent in 60 bodies for post-mortem examination.

The Police brought in 192 cases for examination or treatment.

Fifty-nine persons were brought by Police for observation for insanity and 12 for examination for leprosy.

Health of Police.—Three hundred and thirty-three Police patients were admitted during the year with no deaths. The majority of admissions were for Malaria, Eczema and Scabies.

JASIN HOSPITAL.

There were 17 cases under treatment at the beginning of the year and 710 cases were admitted during the year.

Estate cases amounted to 218, other paying cases 13, and the remaining 475 cases were either paupers or Government employees. 65 out of the total of 727 cases treated were females.

There were 74 deaths during the year, of which 8 were females. 24 deaths occurred within 48 hours after admission to the Hospital.

Percentage of deaths to total treated 10·18

Percentage excluding deaths within 48 hours 6·88

The chief diseases treated were:—

| | |
|--------------------------|----------------------------------|
| Beri-beri | 56 with 8 deaths. |
| Dysentery | 18 .. 6 .. (1 within 48 hours.) |
| Gonorrhœa | 11 |
| Malaria Malignant | 125 .. 8 .. (6 ..) |
| Malaria Benign Tertian | 6 |
| " Chronic | 21 .. 1 death |
| Pneumonia, Lobar | 32 .. 8 deaths (4 ..) |
| Ankylostomiasis | 97 .. 16 .. (2 ..) |
| Bronchitis | 12 |

compared with those of the previous year show as follows:—

1918.—Total treated 1,359. Deaths 220. 70 died within 48 hours.
Percentage of deaths to total treated 16·19 excluding deaths within 48 hours 11·03.

1919.—Total treated 727. Deaths 74. 24 died within 48 hours. Percentage, excluding deaths within 48 hours, 6·88

One hundred and seven minor operations were performed during the year.

There was no outbreak of either Small-pox, Chicken-pox, Cholera or Plague in the District and there were no admissions to the Quarantine Camp.

Forty-three Post-mortem Examinations were performed during the year, 14 of which were Police cases, of which 3 died of natural causes and the remaining 11 otherwise.

Two hundred and ninety-one out-patients were treated during the year. 255 were males and 36 females. One hundred and fifty-eight were Government employees, 47 paupers and the remaining 86 were paying cases.

Total cash receipts for the year amounted to \$27.80.

The most common causes of ill-health treated were as follows:—

| | | | | | |
|--------------------|-----|-----|-----|-----|----|
| Malaria, malignant | ... | ... | ... | ... | 55 |
| Gonorrhœa | ... | ... | ... | ... | 6 |
| Bronchitis | ... | ... | ... | ... | 30 |
| Broncho Pneumonia | ... | ... | ... | ... | 4 |
| Pleurisy | ... | ... | ... | ... | 6 |
| Diarrhœa | ... | ... | ... | ... | 13 |
| Constipation | ... | ... | ... | ... | 27 |
| Intestinal Colic | ... | ... | ... | ... | 5 |
| Skin Diseases | ... | ... | ... | ... | 5 |
| Syphilis | ... | ... | ... | ... | 7 |

There were no deaths.

There were 412 vaccinations of infants and 5,826 re-vaccinations performed during the year compared with 316 and 2,070 respectively during 1918. Eleven cases of vaccination of infants failed. The majority of the re-vaccinations were not available for inspection.

Hospital Buildings.—Minor repairs only were carried out.

Assistant Surgeon K. V. VEERASINGAM who took charge in September, 1918, has remained on duty throughout the year. MOHAMED DOM and ABDUL GHANI, 1st Grade dressers, constituted the dressing staff throughout the year.

The health of the Hospital staff as a whole has been good.

Prison Hospital.

Dr. J. W. ADAMS was in charge up to the 23rd August, 1919, when he was relieved by Dr. J. R. McVAIL.

Hospital Assistant LAZAROO was attached for duty during the year.

On the 1st January, 1919, there were five cases under treatment. There were forty-four admissions during the year with no death.

The chief diseases were:—

| | | | | | |
|--------------------------|-----|-----|-----|-----|----|
| Dysentery | ... | ... | ... | ... | 5 |
| Beri-beri | ... | ... | ... | ... | 2 |
| Malaria fever, malignant | ... | ... | ... | ... | 17 |
| Malaria, Chronic | ... | ... | ... | ... | 1 |
| S. Syphilis | ... | ... | ... | ... | 1 |
| Rheumatism | ... | ... | ... | ... | 1 |
| Conjunctivitis | ... | ... | ... | ... | 1 |
| Bronchitis | ... | ... | ... | ... | 3 |
| Asthma | ... | ... | ... | ... | 3 |
| Pneumonia | ... | ... | ... | ... | 1 |
| Phthisis | ... | ... | ... | ... | 1 |
| Hæmorrhoids | ... | ... | ... | ... | 1 |
| Diarrhœa | ... | ... | ... | ... | 1 |
| Appendicitis | ... | ... | ... | ... | 1 |
| Bubo | ... | ... | ... | ... | 1 |
| Herpes Zoster | ... | ... | ... | ... | 1 |
| Ulcer | ... | ... | ... | ... | 3 |
| Scabies | ... | ... | ... | ... | 3 |
| Centipede Bite | ... | ... | ... | ... | 1 |
| Scalds | ... | ... | ... | ... | 1 |

MEDICAL MISSION, MALACCA.

Statistics for 1919:—

| | | | | | |
|-------------------|-----|-----|-----|-----|-------|
| In-patients | ... | ... | ... | ... | 203 |
| Total attendances | ... | ... | ... | ... | 3,521 |

Malay Attendances:—

| | | | | | |
|------------------|-----|-----|-----|-----|-------|
| In-patients | ... | ... | ... | ... | 18 |
| Out-patients | ... | ... | ... | ... | 604 |
| New Out-patients | ... | ... | ... | ... | 1,296 |

Attendances for:—

| | | | | | |
|------------------------|-----|-----|-----|-----|-----|
| Ophthalmia Diseases | ... | ... | ... | ... | 67 |
| Gynæcological Diseases | ... | ... | ... | ... | 663 |
| Malaria | ... | ... | ... | ... | 143 |
| Maternity cases | ... | ... | ... | ... | 102 |

Operations:—

| | | | | | |
|--------------------|-----|-----|-----|-----|----|
| Major | ... | ... | ... | ... | 19 |
| Minor | ... | ... | ... | ... | 43 |
| Vaccinations | ... | ... | ... | ... | 17 |
| Dental Extractions | ... | ... | ... | ... | 9 |
| Deaths | ... | ... | ... | ... | 25 |
| Still-born infants | ... | ... | ... | ... | 8 |

Maternity Work.—Of the 102 cases 19 were abnormal. Only one mother died and she would most probably have been saved if she had sent for us earlier. She died of exhaustion within one hour of the doctor's arrival.

Three pupils have passed the Government examination for Midwives during the year.

Two others are to be sent to Singapore shortly for the examination.

Deaths.—Of the 25 deaths for the year two only were adults, 9 were infants under one month old, 8 were infants between 1 to 2½ months.

Three infants died of Tetanus and 2 of umbilical sepsis. None of these had the attention of a midwife at the time of their birth.

Three died of Diarrhœa, 5 of Malaria, 4 of Bronchitis and 3 of Meningitis.

General.

Dr. J. W. ADAMS was in charge of the Department up to 23rd August, 1919, when I relieved him.

Clerical Branch.—Mr. V. E. DIAS, the Chief Clerk, worked throughout the year. Mr. TAN QUEE SENG, Clerk, Class III, was transferred on promotion to Jasin on the 1st July, 1919, and was relieved by Mr. R. SPYKERMAN. Mr. LIOW BAN POH, Clerk, Class III, also worked throughout the year.

REPORT OF HEALTH OFFICE FOR 1919.

The weekly mortality chart for Malacca showed its maximum crests in January, June, July and August. The two highest points being in January and July.

The maximum rainfall being in July the relationship noticed by Dr. W. W. MARTIN in 1918 of maximum mortality 3 months after maximum rainfall was again observed.

The curves of Malaria, unspecified fever and convulsions followed the main curve fairly closely.

These three headings cover the causes of over 70 per cent of all the deaths in Malacca a total of 4,970. This is 5 per cent less than in 1918 but the fall is really larger than appears as the 1918 returns were swollen by influenzal deaths.

In the year under review one of the largest experiments ever made in Malacca was carried out.

The larger part of available sawah distributed all through the Settlement was brought under paddy without increasing the Malarial death-rate.

The figures are:—

| | <i>Malaria.</i> | <i>Unspecified Fever.</i> | <i>Convulsions.</i> | <i>Total.</i> |
|----------|-----------------|-------------------------------|---------------------|---------------|
| 1918 ... | 1,883 | 1,491 | 1,500 | 4,874 |
| 1919 ... | 962 | 924 | 1,439 | 3,325 |

Mortality returns are not a true index of Malaria Incidence but the evidence as far as it goes supports WATSON'S position that rice cultivation does not increase malaria in Malaya.

Milk.—Fifty-six samples of milk were examined of which 36 samples were found adulterated with water. Prosecutions were undertaken in 36 cases and fines amounting to \$1,341 were inflicted.

The percentage of added water was as high as 75 per cent in two cases.

Water.—Thirty-nine samples were analysed chemically. Monthly analysis was made of the Municipal pipe water supply as well as quarterly analysis of water from the three Bukit China wells which is sold in the town.

In all cases the samples showed a water fit for domestic use.

The three Bukit China wells were cleaned and disinfected twice during the year.

The remaining samples were from wells on estates, at Police Stations, villages, etc. Nine of them showed a water unsafe for drinking.

In connection with the solitary case of cholera which occurred a count of wells in Malacca Town was made and 1,392 were found in use and 15 not in use.

A water supply which must be supplemented to such an extent is evidently inadequate and it is quite likely that some of these wells are used to supply drinking water in spite of denials.

It would appear that any attempt to close wells generally during a cholera epidemic would be attended with grave risk. The consequent strain on the pipe supply would cause a shortage of it and the more careless inhabitants would use their wells for drinking, thus the danger it was sought to lessen would be increased.

Estates Visited.

One hundred and forty-three visits were made to estates and 116 separate estates were visited including most of the European owned ones.

The appointment of a dresser speaking several Chinese languages as well as Malay and able to make himself understood in Tamil has been a great convenience and has made it possible to give a good deal of attention to the smaller Chinese estates which would hardly have been possible without him.

These estates have been difficult to deal with. They are hard to find and often there is no one on them who speaks Malay, and as a rule the conditions found are bad.

Moreover they have been hardly able to carry on during the last year or two, and it has consequently been useless to make any but the minimum of

demands on their owners. With the advent of more prosperous times it will be possible to do more.

The conditions on European owned estates are usually good and recommendations are as a rule carried out as rapidly as finances permit. Some of the Managers are enthusiastic sanitarians.

There has been some improvement in sending in sick returns by Estate Managers, but in view of the creation of the Malacca Agricultural Medical Board it has not been thought necessary to press the matter. When the Board is working the Department will be in a better position as regards knowledge of disease than ever before.

Police Stations Visited.

Twenty-three Police Stations were visited by the Health Officer and the remainder by the Chief Medical Officer and reports made drawing attention to any sanitary defects.

Anopheline Surveys.

Surveys were made by the Health Officer on the far side of Bukit China in connection with the proposed erection of a Hospital on Bukit China also towards Klebang. A few larvæ were found in both places, not in the sawah but in pools at the sawah edge. A good deal of work has been done in the country by various estate Medical Officers and when the arrangements of the Malacca Agricultural Medical Board are complete the greater part of the Settlement will be gradually surveyed.

Infective Diseases.

Only one case of cholera—not fatal—occurred. The patient contracted the disease in Singapore. The case was isolated at Mata Kuching, his quarters disinfected and contacts kept under supervision.

An outbreak of Cholera at Kluang and Batu Pahat caused some anxiety. Though land quarantine is notoriously ineffective it seemed worth while to station dressers at the bridge at Sungei Rambei to examine and report on passengers.

Arrangements were also made to station a dresser at Batang Malaka to go through with the train to Tampin and examine and report by telegraph. However, the outbreak fortunately came to an end before it was necessary to do this.

No case of Plague, Small-pox, Cerebro Spinal Meningitis or Influenza occurred, in spite of the prevalence of all these diseases in the Peninsula. It can hardly be hoped that this immunity can continue. In view of the large rice cultivation and the prospective storage of the crop in various kampongs every effort has been made to have rice stores made rat proof, and Sanitary Inspectors have instructions to explain the danger to the people at every opportunity.

Influenza placards were posted about the town on two occasions and arrangements made for oiling of premises and supply of medicine, fortunately unnecessary.

It is the practice for passengers from infected ships to go to their destination after signing a bond to report to the local Health Officer. Several Indian passengers failed to report and could not be found. One European domiciled in the Federated Malay States pledged himself to report in Malacca. Such mistakes cause much trouble to the Department.

Vaccination.—In view of the incidence of Small-pox on surrounding places the Principal Civil Medical Officer decided to press the vaccination of the

people to the utmost, and to assist the Department, Mr. BROCKWELL, Head of the Malay College, arranged that such of his gurus as were competent vaccinators should vaccinate in the various Vernacular Schools.

The scholars were inspected the week after by the Chief Medical Officer or Health Officer and the results were very satisfactory.

Quarantine Station Visited.

A visit was made to the Quarantine Station on Pulo Upeh with a view to using it in case of an epidemic of cholera. Its solitary advantage is its isolation but its isolation makes it practically useless owing to expense, inconvenience, difficulty of landing patients and possible danger to them.

Ankylostomiasis Work.

Prevention of ankylostomiasis has had attention chiefly in the Central District which has previously had a Sanitary Inspector. He explains to the people the need of latrines which in his district now number about 3,284.

The policy of the Department remains as before, persuasion not compulsion.

When Sanitary Inspectors were appointed to Jasin and Alor Gajah Districts no immediate attempt was made to press for the construction of latrines.

It seemed better to wait till the new Inspectors had learned something of the life history of the worm and its mode of infecting.

There are at present about 50 latrines in Jasin outside the villages and 2,000 in Alor Gajah.

Schools.

It was not found practicable to begin medical inspection of schools but is anticipated that it will be carried out in 1920.

Staff.

Dr. MARTIN left on 15th March and Dr. WOOLRABE took up duty on 19th. Mr. C. O. RODRIGUES, Clerk, Class II, was appointed on 1st March, 1919. He was transferred to Singapore on 1st December, 1919, and replaced Mr. KOH SENG HOK. Mr. E. J. BEINS and Mr. V. E. NONIS were appointed Sanitary Inspectors to Jasin and Alor Gajah Districts respectively on May 1st and Mr. SOH PENG ANN as Dresser and Interpreter on July 1st.

Instructions.

The three Sanitary Inspectors and Dresser PENG ANN have been regularly instructed in simple sanitation—the Role of Insects in Disease—Worm Diseases—Diseases caused and carried by Food-habits and Identification of common mosquitoes—Disinfection, etc. An examination was held and the answers were on the whole encouraging.

APPENDIX E.

OUT-DOOR DISPENSARIES.

SINGAPORE.

(North Canal Road.)

REPORT BY MR. LEE KEK SOON, *Assistant Surgeon-in-charge.*

1. The number of patients during the year was 5,219 against 6,187 in 1918.

The number of visits was 10,262 against 12,570 in 1918.

The Dispensary was open for 293 days which gives a daily average of 52.83 against 63.15 in the previous year.

The greater number of patients and visits in the previous year can partly be accounted for by the epidemic of influenza which occurred in the autumn of that year.

2. Of the 5,219 patients treated, 4,112 were paying patients, 374 were Government Servants, and 733 were Indigent and Venereal patients.

3. The total receipts for the year amounted to \$1,209.05 against \$1,405.10 in 1918.

4. The nationalities of those treated were as follows:—

| | | | <i>Males.</i> | <i>Females.</i> |
|-----------|-----|-------|---------------|-----------------|
| Europeans | ... | ... | 8 | 0 |
| Eurasians | ... | ... | 73 | 81 |
| Chinese | ... | ... | 2,876 | 729 |
| Indians | ... | ... | 965 | 137 |
| Malays | ... | ... | 191 | 81 |
| Others | ... | ... | 59 | 19 |
| | | Total | 4,172 | 1,047 |

5. The principal diseases treated were as follows:—

| | | | |
|---------------------------|-----|-----|-------|
| Malaria | ... | ... | 500 |
| Venereal Diseases | ... | ... | 362 |
| Ulcers and Minor Injuries | ... | ... | 1,460 |
| Pyrexia Unspecified | ... | ... | 208 |
| Bronchitis | ... | ... | 358 |

6. *Malaria.*—Five hundred cases of Malaria were treated against 403 in the previous year. Of those locally infected Tanjong Pagar and the Keppel Harbour District were responsible for the greater number of cases; others came from Bukit Timah, Havelock Road, and the Tanglin District. Of those infected outside of Singapore, Johore was the chief place of infection; others came from the surrounding islands and a few came from other parts of the Peninsula.

Blood film and sputa were examined only in doubtful cases.

7. *Veneral Diseases*.—These were given free treatment and the particulars were as follows:—

| | <i>Males.</i> | | | |
|--------------------------|---------------|-----|-----|-----|
| | — | | | |
| Syphilis, Primary | ... | ... | ... | 110 |
| „ Secondary | ... | ... | ... | 147 |
| „ Tertiary | ... | ... | ... | 27 |
| Gonorrhœa | ... | ... | ... | 49 |
| Buboes | ... | ... | ... | 29 |

8. The number of children of two years and under treated was 180. They suffered chiefly from lung complaints (mostly Bronchitis) intestinal disorders, pyrexia, worms, and skin diseases.

9. During the year Potassium Permanganate gargle was freely given away to anyone who brought an empty bottle.

10. Mr. GOH TONG SIN was in charge of the Dispensary up till the end of April when I relieved him.

Jalan Klapa Out-Door Dispensary.

REPORT BY MR. LEE EE LIAT, Assistant Surgeon-in-charge.

The number of patients treated at the Dispensary in 1919 was 2,791, against 3,618 in 1918; the total number of visits paid being 8,022 (against 10,693) giving an average attendance per diem of 27.38 (against 36.12) for the 293 days during which the dispensary was open.

The cases consisted of:—

| | | | |
|----------------------------|-----|-----|--------------|
| Paying patients | ... | ... | 2,215 |
| Non-paying patients:— | | | |
| Government servants | ... | ... | 21 |
| School children | ... | ... | 192 |
| Veneral cases | ... | ... | 230 |
| Pauper patients | ... | ... | 133 |
| | | — | 576 |
| | | | <u>2,791</u> |

The receipts of the year amounted to \$646.95.

The principal diseases treated and the number of cases of each were as follows:—

| | <i>Malaria.</i> | <i>Venerals.</i> | <i>Bronchitis.</i> | <i>Pyrexia.</i> | <i>Minor Injuries and Ulcers.</i> |
|-------------|-----------------|------------------|--------------------|-----------------|-----------------------------------|
| | — | | | | |
| 1919 | 346 | 230 | 240 | 237 | 630 |
| 1918 | 697 | 166 | 347 | 294 | 594 |

Malaria.—Of the 345 cases 150 were able to state they were new arrivals in the Colony and were infected before arrival, the countries of origin being (in order of frequency): Johore, the neighbouring islands, and the Federated Malay States. The other 195 cases were mostly locally infected and came from the districts of Rochore, Kallang, Gaylang, Serangoon, Seletar, Bukit Timah and Bukit Panjang.

Veneral Diseases.—(Gonorrhœa 75, Syphilis 67, Bubo 29, Chancre 59, Total 230 cases). By far the greater number gave a history of infection from brothels, they chiefly came for treatment early, and obtained a satisfactory result.

Minor Injuries and Ulcers.—Most of the cases were simple, they came for treatment regularly and were speedily relieved, especially in the case of injuries.

The nationalities of the patients were as follows:—

| | | | | <i>Males.</i> | <i>Females.</i> |
|-----------|-----|-----|-------|---------------|-----------------|
| | | | | — | — |
| Eurasians | ... | ... | ... | 79 | 39 |
| Chinese | ... | ... | ... | 1,134 | 129 |
| Malays | ... | ... | ... | 658 | 306 |
| Indians | ... | ... | ... | 361 | 45 |
| Others | ... | ... | ... | 34 | 6 |
| | | | Total | 2,266 | 525 |

I was in charge throughout the year.

PENANG.

Chowrasta Dispensary.

Appended is a comparative statement of the work done during the year 1919.

The patients treated during the year numbered 8,487 against 7,817 in 1918.

The Dispensary was open for 309 days, the daily average number of visits being 46.56 that of 1918 being 47.46.

The total receipts amounted to \$572.15 a decrease of \$63.35 to that of 1918.

This institution continues to be well appreciated by the poor class of people.

The principal diseases treated as compared with that of the preceding year were as follows:—

| | | | | 1918. | 1919. |
|-------------------|-----|-----|-----|-------|-------|
| | | | | — | — |
| Influenza | ... | ... | ... | 738 | 82 |
| Malaria | ... | ... | ... | 172 | 150 |
| Pyrexia | ... | ... | ... | 1,158 | 2,075 |
| Rheumatism | ... | ... | ... | 349 | 176 |
| Venereal Diseases | ... | ... | ... | 294 | 405 |
| Bronchitis | ... | ... | ... | 410 | 416 |
| Diarrhœa | ... | ... | ... | 125 | 246 |
| Dyspepsia | ... | ... | ... | 135 | 124 |
| Ulcer | ... | ... | ... | 1,317 | 1,261 |
| Injuries | ... | ... | ... | 617 | 522 |

The nationalities of those treated comprised:—

| | | | | 1918. | 1919. |
|------------------|-----|-----|-----|-------|-------|
| | | | | — | — |
| Europeans | ... | ... | ... | 11 | 18 |
| Eurasians | ... | ... | ... | 299 | 377 |
| Chinese | ... | ... | ... | 2,351 | 2,015 |
| Malays | ... | ... | ... | 2,020 | 2,560 |
| Natives of India | ... | ... | ... | 2,998 | 3,424 |
| Others | ... | ... | ... | 138 | 93 |

COMPARATIVE STATEMENT SHOWING THE NUMBER OF PATIENTS AT THE GOVERNMENT OUT-DOOR DISPENSARY, PENANG, 1910 TO 1919.

| | 1910. | 1911. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | 1918. | 1919. |
|---------------------------------------|------------|----------|--------|----------|--------|--------|--------|--------|--------|--------|
| Number of patients attended ... | 8,328 | 7,648 | 7,477 | 7,701 | 6,628 | 5,878 | 6,101 | 6,107 | 7,817 | 8,487 |
| " visits paid ... | 16,535 | 16,762 | 16,051 | 19,134 | 15,679 | 14,593 | 15,551 | 15,568 | 14,715 | 14,390 |
| Patients treated free ... | 3,519 | 2,747 | 2,688 | 2,010 | 1,786 | 1,469 | 1,589 | 1,759 | 3,972 | 5,316 |
| Indigent patients ... | 558 | 756 | 782 | 1,170 | 1,928 | 1,272 | 1,108 | 1,129 | 1,215 | 832 |
| Paying patients ... | 4,251 | 4,145 | 4,507 | 4,521 | 2,914 | 3,137 | 3,404 | 3,219 | 2,630 | 2,339 |
| Average number of visits per diem ... | 52.99 | 53.72 | 51.44 | 61.32 | 50.41 | 47.00 | 50.16 | 50.05 | 47.46 | 46.56 |
| Number of days dispensary open ... | 312 | 312 | 312 | 312 | 311 | 310 | 310 | 310 | 310 | 309 |
| Receipt for the year ... | \$1,047.45 | 1,003.20 | 973.80 | 1,001.30 | 736.65 | 736.35 | 798.25 | 750.50 | 635.50 | 572.15 |

RETURN OUT-DOOR DISPENSARY, 1919.

| | Total patients. | Total visits. | Indigent patients. | Paying patients. | Police Force. | Govt. Officers. | Free patients. | Receipt. |
|-------------|-----------------|---------------|--------------------|------------------|---------------|-----------------|----------------|-----------|
| January | ... | ... | ... | ... | ... | ... | ... | ... |
| February | ... | ... | ... | ... | ... | ... | ... | ... |
| March | ... | ... | ... | ... | ... | ... | ... | ... |
| 1st Quarter | 1,616 | 3,042 | 206 | 492 | 374 | 365 | 179 | \$ 123 40 |
| April | ... | ... | ... | ... | ... | ... | ... | ... |
| May | ... | ... | ... | ... | ... | ... | ... | ... |
| June | ... | ... | ... | ... | ... | ... | ... | ... |
| 2nd Quarter | 2,066 | 3,695 | 202 | 581 | 694 | 347 | 242 | 144 05 |
| July | ... | ... | ... | ... | ... | ... | ... | ... |
| August | ... | ... | ... | ... | ... | ... | ... | ... |
| September | ... | ... | ... | ... | ... | ... | ... | ... |
| 3rd Quarter | 2,286 | 3,852 | 226 | 594 | 613 | 577 | 276 | 148 10 |
| October | ... | ... | ... | ... | ... | ... | ... | ... |
| November | ... | ... | ... | ... | ... | ... | ... | ... |
| December | ... | ... | ... | ... | ... | ... | ... | ... |
| 4th Quarter | 2,519 | 3,801 | 198 | 672 | 826 | 634 | 189 | 156 60 |
| Grand Total | 8,487 | 14,390 | 832 | 2,339 | 2,507 | 1,923 | 886 | 572 15 |

Assistant Surgeon J. H. L. WESTERHOUT did duty from 1st January to 10th April, 1919, and again from 5th December to the end of the year.

Assistant Surgeon D. C. RICHARD acted from 11th April to 5th December, 1919.

Dresser V. DANIEL PILLAY was on duty throughout the year.

Out-door Dispensary, Lumut.

The total number of cases treated was 448 as compared with 545 of the previous year. The daily average number of visits for the year was 1.62 as compared with 3.13 of the previous year. Of these cases 169 were for Malaria.

The receipts for the year for the Out-door Dispensary amounted to \$40.40.

Out-door Dispensary, Balik Pulau.

During the year 978 persons presented themselves for treatment as compared with 575 the previous year. The receipts totalled \$187.25 against \$87.85 in 1918.

The attached tables give statements of the work done.

| <i>Particulars.</i> | <i>1918.</i> | <i>1919.</i> |
|---------------------------------------|--------------|--------------|
| Number of patients ... | 575 | 978 |
| Number of visits ... | 971 | 1,806 |
| Number of indigent patients ... | 110 | 106 |
| Number of Government servants ... | 62 | 44 |
| Number of paying patients ... | 403 | 828 |
| Number of males ... | 408 | 651 |
| Number of females ... | 167 | 327 |
| Average number of visits per diem ... | 2.66 | 4.94 |
| Receipts for the year ... | \$87.85 | \$187.55 |

| <i>Nationalities.</i> | <i>1918.</i> | | <i>1919.</i> | |
|-----------------------|---------------|-----------------|---------------|-----------------|
| | <i>Males.</i> | <i>Females.</i> | <i>Males.</i> | <i>Females.</i> |
| Europeans ... | 3 | 5 | 2 | — |
| Eurasians ... | 1 | 1 | 1 | — |
| Chinese ... | 298 | 148 | 510 | 297 |
| Malays ... | 65 | 3 | 68 | 11 |
| Natives of India ... | 41 | 10 | 70 | 19 |
| Total ... | 408 | 167 | 651 | 327 |

Out-door Dispensary, Butterworth.

(a) One thousand four hundred and fifty-six cases were treated during the year, and the total number of visits was 3,100. The Government Officers treated amounted to 683 the majority of whom were from the Federated Malay States Railway, Prai. The collections, etc., amounted to \$306.66 as compared with \$271.93 for 1918.

(b) The principal diseases treated were as follows:—

| <i>Diseases.</i> | | | | | <i>Number of cases.</i> |
|------------------------|-----|-----|-----|-----|-------------------------|
| — | | | | | — |
| Malaria fever | ... | ... | ... | ... | 227 |
| Bronchitis | ... | ... | ... | ... | 144 |
| Dyspepsia | ... | ... | ... | ... | 85 |
| Constipation | ... | ... | ... | ... | 66 |
| Diarrhoea | ... | ... | ... | ... | 41 |
| Colic | ... | ... | ... | ... | 23 |
| Ascariasis | ... | ... | ... | ... | 26 |
| Gastritis | ... | ... | ... | ... | 16 |
| Pyrexia (unclassified) | ... | ... | ... | ... | 65 |
| Secondary Syphilis | ... | ... | ... | ... | 21 |
| Gonorrhoea | ... | ... | ... | ... | 13 |
| Asthma | ... | ... | ... | ... | 17 |
| Conjunctivitis | ... | ... | ... | ... | 17 |
| Dysmenorrhoea | ... | ... | ... | ... | 15 |

(c) The nationalities of out-patients treated were:—

| | | | | | <i>Males.</i> | <i>Females.</i> |
|------------------|-----|-----|-----|-----|---------------|-----------------|
| | | | | | — | — |
| Europeans | ... | ... | ... | ... | 164 | 49 |
| Eurasians | ... | ... | ... | ... | 68 | 39 |
| Chinese | ... | ... | ... | ... | 285 | 33 |
| Malays | ... | ... | ... | ... | 188 | 33 |
| Natives of India | ... | ... | ... | ... | 518 | 79 |

Out-door Dispensary, Bukit Mertajam.

The number of patients treated during the year was 1,070 and receipts amounted to \$153.33 as compared with 1,416 patients and \$220.55 in the previous year.

The nationalities of patients were:—

| | | | | | <i>Males.</i> | <i>Females.</i> |
|-----------|-----|-----|-----|-------|---------------|-----------------|
| | | | | | — | — |
| Europeans | ... | ... | ... | ... | 18 | nil |
| Eurasians | ... | ... | ... | ... | 30 | 7 |
| Chinese | ... | ... | ... | ... | 380 | 183 |
| Malays | ... | ... | ... | ... | 111 | 36 |
| Indians | ... | ... | ... | ... | 188 | 53 |
| Others | ... | ... | ... | ... | 48 | 16 |
| | | | | | — | — |
| | | | | Total | 775 | 295 |
| | | | | | — | — |

The principal diseases treated were:—

| | | | | | |
|------------------|-----|-----|-----|-----|-----|
| Malaria | ... | ... | ... | ... | 3 |
| Dysentery | ... | ... | ... | ... | 21 |
| Gonorrhœa | ... | ... | ... | ... | 17 |
| Pyrexia | ... | ... | ... | ... | 159 |
| Rheumatism | ... | ... | ... | ... | 8 |
| Syphilis | ... | ... | ... | ... | 50 |
| Anæmia | ... | ... | ... | ... | 12 |
| Conjunctivitis | ... | ... | ... | ... | 9 |
| Bronchitis | ... | ... | ... | ... | 136 |
| Phthisis | ... | ... | ... | ... | 9 |
| Dyspepsia | ... | ... | ... | ... | 7 |
| Diarrhœa | ... | ... | ... | ... | 17 |
| Intestinal Colic | ... | ... | ... | ... | 7 |
| Buboes | ... | ... | ... | ... | 3 |
| Soft Chancre | ... | ... | ... | ... | 5 |
| Wounds | ... | ... | ... | ... | 54 |
| Round Worms | ... | ... | ... | ... | 60 |
| Ankylostomiasis | ... | ... | ... | ... | 1 |
| Influenza | ... | ... | ... | ... | 13 |

Out-door Dispensary, Sungei Bakap.

Eight hundred and sixty-four patients were treated throughout the year against 1,090 in the previous year. The collection amounted to \$147.72 as against \$198.74 of the previous year.

The nationalities of those treated were:—

| | | | | <i>Males.</i> | <i>Females.</i> |
|-----------|-----|-----|-----|---------------|-----------------|
| | | | | — | — |
| Europeans | ... | ... | ... | 9 | — |
| Eurasians | ... | ... | ... | 3 | 3 |
| Chinese | ... | ... | ... | 307 | 100 |
| Malays | ... | ... | ... | 56 | 14 |
| Indians | ... | ... | ... | 299 | 47 |
| Others | ... | ... | ... | 15 | 11 |
| | | | | — | — |
| Total | ... | | | 689 | 175 |
| | | | | — | — |

Principal Diseases.—The principal diseases treated were as follows:—

| <i>Disease.</i> | <i>Number of cases.</i> |
|-----------------------------|-------------------------|
| Anæmia | 1 |
| Beri-beri | 5 |
| Cerebro-Spinal Fever | nil |
| Cholera | nil |
| Diarrhœa | 17 |
| Dysentery | 23 |
| Enteric Fever | nil |
| Gonorrhœa | 10 |
| Helmenthiasis | 28 |
| Influenza | 3 |
| Leprosy | nil |
| Malaria | 215 |
| Nephritis | 1 |
| New Growth | nil |
| Pneumonia | nil |
| Small-pox | nil |
| Soft Chancres | 5 |
| Syphilis | 23 |
| Tuberculosis | 1 |
| V. D. H. | 7 |
| Wounds and Injuries | 76 |
| Ulcers | 88 |
| Yaws | 1 |

Out-door Dispensary, Nibong Tebal.

Buildings.—The witness room (old) in the District Office, Nibong Tebal, has been in use throughout the year, the dispensary was kept open throughout the year for the public and Government Servants from 8 A.M. to 10 A.M. on Mondays, Wednesdays and Fridays.

Staff.—The Assistant Surgeon, Sungei Bakap, and the junior dresser, Sungei Bakap Hospital, attended the dispensary at the usual hours.

Work done.—The Dispensary was opened 157 days during the year, 355 patients attended the dispensary as compared with 472 patients in the previous year. Of these 201 were Government Servants, 138 paying patients, and 16 indigent patients, the daily average number of visits was 4.19 as compared with 5.86 in 1918.

Collections.—The collections amounted to \$33.10 as compared with \$45.35 in the previous year; the drugs and dressings were supplied from Sungei Bakap Hospital.

Nationality.—The nationalities of those treated were:—

| | <i>Males.</i> | <i>Females.</i> |
|---------------------|---------------|-----------------|
| European | 2 | ... |
| Eurasians | ... | ... |
| Chinese | 82 | 23 |
| Malays | 67 | 2 |
| Indians | 142 | 28 |
| Others | 4 | 5 |
| Total | 297 | 58 |

The principal diseases treated were as follows:—

| <i>Disease.</i> | <i>Number of cases.</i> |
|-----------------------------|-------------------------|
| Anæmia | nil |
| Beri-beri | nil |
| Cerebro-Spinal Fever | nil |
| Cholera | nil |
| Diarrhœa | 4 |
| Dysentery | 5 |
| Enteric Fever | nil |
| Gonorrhœa | nil |
| Helmenthiasis | 5 |
| Influenza | 5 |
| Leprosy | nil |
| Malaria and Fevers | 61 |
| Nephritis | nil |
| New Growth | nil |
| Pneumonia | nil |
| Small-pox | nil |
| Soft Chancres | 2 |
| Syphilis | nil |
| Tuberculosis (lungs) | 1 |
| V. D. H. | nil |
| Wounds and Injuries | 49 |
| Ulcers | 47 |
| Yaws | nil |

MALACCA.

Malacca Out-door Dispensary.

This was under the charge of Mr. R. M. NONIS throughout the year. Three thousand two hundred and fifty-four cases were treated in the Dispensary as contrasted with 3,782 in 1918.

The total receipts for the year were \$145.15 as against \$240.44 in 1918.

Nationalities.—The nationalities of those treated were:—

| | <i>Males.</i> | <i>Females.</i> |
|------------------|---------------|-----------------|
| Europeans | 11 | 60 |
| Eurasians | 783 | 586 |
| Chinese | 429 | 184 |
| Malays | 692 | 74 |
| Indians | 361 | 74 |
| Others | nil | nil |

The chief diseases treated were:—

| | |
|-------------------|----|
| Beri-beri | 28 |
| Dysentery | 10 |
| Influenza | 1 |
| Pneumonia | 1 |
| Dyspepsia | 1 |
| Flatulency | 52 |

| | |
|-----------------------|-----|
| Diarrhoea | 129 |
| Constipation | 198 |
| Malaria | 82 |
| Pyrexia | 453 |
| Rheumatism | 70 |
| Anæmia | 26 |
| Debility | 117 |
| Neuritis | 32 |
| Neuralgia | 45 |
| Conjunctivitis | 47 |
| Ear-ache | 15 |
| Asthma | 72 |
| Bronchitis | 148 |
| B. Catarrh | 522 |
| Stomatitis | 56 |
| Tonsilitis | 27 |
| Colic | 63 |
| Nephritis | 12 |
| Cystitis | 16 |
| Myalgia | 30 |
| Inflammation | 29 |
| Ulcer | 107 |
| Abscess | 12 |
| Eczema | 35 |
| Boil | 26 |
| Sprain | 11 |
| Wound | 40 |
| Round-Worms | 120 |
| Tinea | 68 |
| Scabies | 67 |

Alor Gajah Dispensary.

Dresser TAMBY KECHIL was in charge throughout the year. The temporary Small-pox shed built in 1915 is still available for use. There was no case of Small-pox, etc.

During the year 303 cases received treatment in the Out-patient Dispensary. Males 275, Females 28.

The total receipts amounted to \$17.80.

The chief diseases treated were:—

| | |
|---------------------|-----|
| Fever | 130 |
| Ulcer | 49 |
| Constipation | 29 |
| Rheumatism | 14 |
| Eczema | 10 |
| Boil | 8 |

APPENDIX F.

QUARANTINE.

SINGAPORE.

REPORT BY DR. G. E. BROOKE, M.A., L.R.C.P., D.P.H., *Chief Health Officer.*

Staff.

| | | |
|--|-----|--|
| Chief Health Officer | ... | G. E. BROOKE, M.A. (Cantab), L.R.C.P. (Edinburgh), D.P.H. Dr. F. R. SAYERS (<i>Acting</i>). Dr. W. W. MARTIN (<i>Acting</i>). |
| Assistant Health Officer (Rural) | | (<i>Vacant</i>). |
| Assistant Health Officer (Port) | | (<i>Vacant</i>). |
| Second Assistant Health Officer (Port) | ... | (<i>Vacant</i>). P. C. FERNANDEZ (<i>Acting</i>). F. CLARKE (<i>Acting</i>). W. D'CRUZ (<i>Acting</i>). |
| Assistant Health Officer (Quarantine Station) | ... | (<i>Vacant</i>). W. D'CRUZ (<i>Acting</i>). P. C. FERNANDEZ (<i>Acting</i>). A. MULLE (<i>Acting</i>). |
| Sanitary Inspector | ... | T. M. REDRUP (<i>Acting</i>). |

Staff.—The Chief Health Officer went on long leave on the 3rd April, and had not returned at the close of the year. He was relieved by Dr. F. R. SAYERS who arrived on 20th March, and took charge of the department until the 27th December, when he sailed on sick-leave by s.s. *Novara* for England.

Dr. W. W. MARTIN arrived from England by s.s. *Agapenor* on 23rd December, and took over as Acting Chief Health Officer from Dr. SAYERS.

The two posts of Assistant Health Officer (Port), and second Assistant Health Officer (Port) were again vacant throughout the year, but the duties of the billets were satisfactorily carried out by Assistant Surgeons P. C. FERNANDEZ, F. CLARKE, and W. D'CRUZ who were on duty for varying periods.

The post of Assistant Health Officer (Quarantine Station) was again vacant throughout the year, the work being carried on successfully by Assistant Surgeon W. D'CRUZ to the end of February; by Assistant Surgeon P. C. FERNANDEZ, F. CLARKE, and W. D'CRUZ who were on duty for varying year.

Mr. T. M. REDRUP who during the previous year had assisted the department as temporary Junk Inspector, joined the department on the 24th May, as an Acting Sanitary Inspector, and so continued until 13th December, when his services were again required as Junk Inspector, a report of the work done will be found herein.

Harbour and Shipping.—Total work done by the department during the past 17 years includes the following:—

| | | | | |
|-------------------------------------|-----|-----|-----|-----------|
| Visits to vessels | ... | ... | ... | 24,944 |
| Crew and Passengers examined | ... | ... | ... | 6,446,114 |
| Number landed on Quarantine Station | ... | ... | ... | 516,360 |
| Vaccinations performed | ... | ... | ... | 116,352 |
| Bills of Health issued | ... | ... | ... | 26,870 |

(Representing a revenue of circa \$130,000).

During the year 1919, 2,130 visits were paid to ships; and 154,311 crew and 257,610 passengers were examined.

Twenty-four of these incoming ships were infected as follows:—Two of them having a double infection (Small-pox plus Cerebro-Spinal; and Small-pox plus Cholera) and none being infected with Plague:—

| Port. | Cholera. | Small-pox. | Cerebro-Spinal. |
|--------------------------------|-----------|------------|-----------------|
| Sourabaya | 1 | ... | ... |
| Batavia | 3 | ... | 1 |
| Madras | 10 | 3 | ... |
| Amoy and Swatow | 1 | 1 | 2 |
| Bangkok | 1 | ... | ... |
| Pulau Samboe | ... | 1 | ... |
| Hoihow | 1 | ... | ... |
| Hongkong | ... | 1 | ... |
| Total infections | 17 | 6 | 3 |

Seventy corpses on ships and sampans were duly inspected and sent to St. John's for post-mortem examination where necessary.

Thirty-eight water-boats supplying the shipping of the port were examined and passed at the time of their annual registration.

The pilgrim season was resumed for the first time since the war, but it was a small exodus as might be expected from the still unsettled state of the Middle East. Seven ships carrying in all 1,261 pilgrims were examined prior to departure and Bills of Health issued in each case.

Owing to shortage of Staff, but little routine sanitary inspection or special work could be carried out in the port.

The disinfecting launches *Crow* and *Hygeia* were used on 535 occasions for the fumigation of infected ships and of ships requiring disinfection before departure. They were also used on 12 occasions for the change of St. John's police guard, and five times for the conveyance of heavy stores.

Office.—Bills of Health to the number of 2,160 were issued. Allowing for free issue to men-of-war, transports, etc., this represents a revenue of about \$10,000.

Permits for the import or export of human remains were issued in 33 instances.

Permits exempting certain approved ships from quarantine examination at subsequent ports in the Colony were granted in 129 cases.

Bonds, to the number of 83, for the surveillance of passengers from quarantine ports were signed by relatives or friends and lodged with the department.

One hundred and fifty-one passes were issued to cabin passengers on infected ships to secure their observation by the Municipal Health Authorities after disembarkation from the ship.

Stocks of disinfectants and dust-allayers were kept in the Government Health Office. The standard mixture recommended for routine treatment of wooden floors in public offices is:—

| | | | | |
|--------------|-----|-----|-----|---------|
| Sanitas Okol | ... | ... | ... | 1 part |
| Kerosene Oil | ... | ... | ... | 3 parts |
| Crude Oil | ... | ... | ... | 8 parts |

About 80 gallons of this mixture was distributed on application.

Disinfection certificates to the number of 500 were issued to ships which had undergone fumigation.

Laboratory work on bacterial diagnosis, breeding of mosquito larvæ, etc., was not undertaken to any extent during the year in question.

Sixty-four out-patients, chiefly from the Marine Department presented themselves at the office for treatment and were granted treatment and leave as necessary. This is a great privilege to the surrounding Government departments, as it obviates the considerable journey to the Government Dispensary in Bukit Timah Road.

Fourteen candidates for Government Service were medically examined in the office, and were all passed as fit.

Quarantine Station.—The total number of passengers admitted to St. John's during the year was 28,318—the maximum number in residence on any one day being 3,082 (18th April).

The total number treated in hospital was 417—the maximum on any day being 75 (17th September); and the average daily number of sick, 13·39.

The number of deaths for the year totalled 94 including five sent for post-mortem and burial from ships, etc.

The death-rate amongst those treated was 21·34 per cent.

Cholera was responsible for thirty-seven admissions and 26 deaths, giving a death-rate of 70·27 per cent of which only two cases received intravenous treatment.

Owing to the presence of cholera in the Lunatic Asylum, 140 lunatics and 22 staff were sent to St. John's on 20th September, and remained there until their discharge on 20th October. Twelve cases of Cholera occurred during their stay.

Some cases of Cholera occurred at Tan Tock Seng and at the General Hospital. Two hundred and fifteen patients from the former and 94 from the latter institution were therefore sent to St. John's, but fortunately the disease did not spread further amongst them.

Municipal cases of infectious disease were sent as usual to the Moulmein Road Hospital, but we detained 103 Cerebro-Spinal contacts for them. None of these developed the disease while in quarantine.

The number of ships non-infected on arrival, whose passengers developed infectious disease during their quarantine period, was two out of 210 ship-loads. Of ships arriving infected, five out of 16 developed further cases.

The number of vaccinations performed on the Quarantine Station was 3,501.

During the year 1,751,520 gallons of Singapore water were supplied and pumped up to our high level reservoir.

The total rainfall was 88·20 inches, with a day's maximum of 7·5 inches on the 25th September.

Rural Health Work.—The absence of an Assistant Health Officer for rural duties precluded the carrying out of much necessary duty *re* estates, villages, etc. A certain amount, however, was undertaken by the Chief Health Officer.

A Sanitary Inspector, Mr. T. M. REDRUP, was appointed on 24th May, and continued on that duty until 13th December, when he began the re-inspection of junks arriving from China.

Forty-three rubber estates were visited and an attempt made to improve their sanitation. Fifty one small estates or gardens were also visited. These small estates are often hard to deal with, as it is difficult to find the owners. The new provisions of the contemplated Labour Code should improve matters considerably.

The labour forces of some of the larger estates are as follows:—

| | <i>Chinese.</i> | <i>Javanese.</i> | <i>Indian.</i> | <i>Malay.</i> |
|----------------------|-----------------|------------------|----------------|---------------|
| Bukit Sembawang ... | 883 | 248 | 250 | ... |
| Singapore United ... | 287 | ... | 155 | 321 |
| Bukit Timah ... | 99 | 106 | 74 | ... |
| Nishin ... | 223 | ... | 10 | 15 |
| Pasir Panjang ... | ... | ... | 251 | ... |
| Ulubri ... | ... | ... | 134 | ... |
| Bukit Panjang ... | 65 | ... | 84 | 8 |
| Ulu Pandan ... | 16 | ... | 45 | 89 |

Holland Road, Bedok, Bukit Panjang, Seletar, and other villages were visited several times, and sanitary matters inquired into.

Calls for examination of Paya Lebar Wireless Station, Joo Chiat Road School, and Teluk Kurau School, were attended to.

Disinfections were carried out for Cholera at the Asylum, Pasir Panjang Hospital, and Government House. At the General Hospital for Small-pox, and at the Central Police Station for Cerebro-Spinal Fever.

A Vaccinator, MOHAMMED BIN OTHMAN, was appointed on 3rd April, for rural districts; and, during the remainder of the year he performed 2,028 vaccinations.

Ten sanitary coolies were sanctioned for general work in the department, but not engaged owing to shortage of staff and lack of supervision.

On the commencement of the incoming junk season, Mr. REDRUP, Sanitary Inspector, was temporarily transferred on 13th December to the work of inspecting junks arriving from China. From that time to the end of the year six junks were examined, with 24 passengers and fifty-six crew. No infectious disease or suspicious cases were discovered. The launch used for the patrol between Bedok and Penggaran was kindly supplied by the Johore Government, as in previous years.

QUARANTINE, PENANG.

REPORT BY DR. W. A. TAYLOR, M.B., CH.B., B.A.O. (Dublin).

1. *Port.*—Ships inspected 493, crew units 48,088, passengers and coolies 162,751.

Five Pilgrim Ships called at this port during the year, 4 from Singapore and 1 from Jeddah, there was no disease on these ships. One thousand one hundred and thirty-nine Pilgrims were carried.

Eleven thousand one hundred and forty-four Chinese Immigrants and 42,191 Indian Immigration coolies arrived here during the year.

Fourteen ships arrived here infected as follows:—

Twelve ships from Negapatam and Madras infected with Cholera.

One ship from Negapatam and Madras infected with Cholera and Small-pox.

One ship from Amoy infected with Cerebro-Spinal Fever and Small-pox.

The disinfecting launch *Kite* was used on 245 occasions.

Eleven Permits "to bury ashore", corpses found on ships and tongkangs.

Two hundred and forty-one Certificates of disinfection, 17 permits to import, tranship and export corpses and 633 Bills of Health were issued during the year, three of these last were "free", one to French Cruiser and two to British Warships.

2. *Quarantine Station Pulau Jerejak*.—Owing to lack of sufficient accommodation at the New Quarantine Station 5,161 Indian Immigration coolies were quarantined at the old Quarantine Station in October.

Total number of persons detained at the Quarantine Station was 50,733 (an increase of 17,252 over 1918) of these 42,191 were Indian Immigration coolies.

The average daily number of persons in quarantine was 1,189 as compared with 720 in 1918.

Two thousand and sixty patients were admitted to the Quarantine Hospital and 3,542 out-door cases were also treated.

The hospital cases were as follows:—

| | | | | <i>Cases.</i> | <i>Deaths.</i> |
|----------------|-----|-----|-----|-----------------|----------------|
| Influenza | ... | ... | ... | 528 | 205 |
| Cholera | ... | ... | ... | 264 | 171 |
| Malaria | ... | ... | ... | 213 | 46 |
| Dysentery | ... | ... | ... | 87 | 37 |
| Measles | ... | ... | ... | 45 | — |
| Pneumonia | ... | ... | ... | 34 | 10 |
| Chicken-pox | ... | ... | ... | 16 | — |
| Small-pox | ... | ... | ... | 6 | 1 |
| Other Diseases | ... | ... | ... | 876 | 89 |
| | | | | Total ... 2,069 | 559 |

Two hundred and fourteen deaths occurred within 48 hours of arriving at the Station, excluding these 214 deaths the death-rate is 6·8 per mille.

Thirty-nine thousand nine hundred and forty-one vaccinations were performed, HENLEY'S lymph being used in all cases, the percentage of success was 75·5.

Extra-Municipal.—Total vaccinations and re-vaccinations for the year 2,128, percentage of success 96·30.

| | <i>Population.</i> | <i>Births.</i> | <i>Deaths.</i> | <i>Birth-rate per mille.</i> | <i>Death-rate per mille.</i> |
|------------------------|--------------------|----------------|----------------|----------------------------------|----------------------------------|
| Penang, Municipal Area | 107,502 | 3,203 | 4,024 | 29·79 | 37·43 |
| Penang, Rural Area ... | 45,140 | 1,400 | 2,342 | 31·01 | 51·88 |
| Penang Island ... | 152,642 | 4,603 | 6,366 | 30·16 | 41·71 |
| Dindings ... | 11,982 | 274 | 358 | 22·87 | 29·88 |
| Province Wellesley ... | 141,115 | 4,361 | 3,533 | 30·90 | 25·04 |

STATEMENT A.

PARTICULARS OF INSPECTION FOR 12 YEARS.

| Year. | Vessels. | Units of crew and passengers inspected. | Total landed on Quarantine Station. |
|-------|----------|---|-------------------------------------|
| 1908 | 1,205 | 176,119 | 21,175 |
| 1909 | 503 | 161,971 | 23,058 |
| 1910 | 526 | 217,967 | 71,876 |
| 1911 | 1,144 | 277,151 | 134,957 |
| 1912 | 634 | 287,373 | 55,493 |
| 1913 | 818 | 272,473 | 53,937 |
| 1914 | 1,040 | 215,067 | 48,399 |
| 1915 | 405 | 148,662 | 23,176 |
| 1916 | 662 | 213,726 | 42,736 |
| 1917 | 367 | 166,162 | 37,595 |
| 1918 | ... | ... | ... |
| 1919 | 493 | 210,839 | 50,733 |

STATEMENT B.

CONDENSED REPORT OF WORK, 1919.

Harbour and Quarantine.

| Year. | Vessels. | Units of Crew and passengers inspected. | Passengers landed on Quarantine Station. | Small-pox treated. | Cholera treated. | Plague treated. | Daily Average Quarantine Station. | Vaccinations |
|----------|----------|---|--|--------------------|------------------|-----------------|-----------------------------------|--------------|
| 1919 ... | 493 | 210,839 | 50,733 | 6 | 264 | ... | 1,189 | 39,941 |

APPENDIX G.

GOVERNMENT ANALYST'S DEPARTMENT, SINGAPORE.

REPORT BY DR. FRANKLAND DENT, M.Sc., Ph.D., F.I.C., *Government Analyst, Straits Settlements.*

The following table shows the Revenue and Expenditure for the year 1919, and, for comparison, the Revenue collected during the preceding year:—

| Revenue. | 1918. | 1919. | Expenditure, 1919. | |
|--------------------------|-----------|-----------|----------------------|-----------|
| <i>Fees of Office.</i> | \$ c. | \$ c. | | \$ c. |
| Petroleum Inspection ... | 2,765 00 | 2,740 00 | Personal Emoluments | 13,010 25 |
| Miscellaneous ... | 8,300 50 | 7,630 00 | Stores from England | a 500 00 |
| | | | Miscellaneous ... | 515 34 |
| Total ... | 11,065 50 | 10,370 00 | Transport Allowances | 225 98 |
| By sale of Pyridine ... | 905 90 | 1,117 75 | Total ... | 14,251 57 |

(a) Estimated.

Petroleum.

(a) KEROSENE.

The following table gives a comparison between the quantities tested on importation into the Island of Singapore during the years 1918 and 1919:—

| Description of Oil. | 1918. | | | 1919. | | |
|---------------------|-------------------------|---------|---------|-------------------------|---------|---------|
| | Number of Consignments. | Tins. | Tons. | Number of Consignments. | Tins. | Tons. |
| <i>Case Oil.</i> | | | | | | |
| American Oil. | Devoe's ... | 2 | 10,862 | ... | 1 | 40,000 |
| | S. Arrow ... | 6 | 51,584 | ... | 2 | 60,000 |
| | Crown ... | 108 | 483,826 | ... | 109 | 391,334 |
| Langkat Oil. | Dragon ... | 25 | 93,725 | ... | 21 | 58,328 |
| | Cross ... | 15 | 14,600 | ... | 18 | 18,700 |
| | R. Sun ... | 12 | 30,308 | ... | ... | ... |
| | L. Glass ... | 9 | 8,492 | ... | 7 | 7,600 |
| Borneo Oil ... | Fish ... | 11 | 10,800 | ... | 15 | 20,072 |
| | ... | 11 | 5,420 | ... | 8 | 3,474 |
| <i>Bulk Oil.</i> | | | | | | |
| Pulau Samboe ... | 1 | ... | 38.36 | ... | ... | ... |
| Total ... | 200 | 709,617 | 38.36 | 181 | 599,508 | ... |

Eight samples were tested for their flash-points for the purpose of adjusting the readings given by various instruments belonging to private firms with those given by the standard one kept in this Laboratory.

(b) BENZINE.

The following table gives a comparison between the quantities imported into the Island of Singapore during the years 1918 and 1919:—

| Nature of Receptacles. | 1918 (369 consignments). | | 1919 (533 consignments). | |
|------------------------|--------------------------|----------|--------------------------|-----------|
| | Number. | Gallons. | Number. | Gallons. |
| 2-gallon cans ... | 337,564 | 675,128 | 502,420 | 1,004,840 |
| 4-gallon drums ... | 11,938 | 47,752 | 16,540 | 66,160 |
| Total ... | 349,502 | 722,880 | 518,960 | 1,071,000 |

The receptacles were in all cases inspected on arrival to see whether they fulfilled the conditions laid down in the Rules and By-laws under the Petroleum Ordinance.

Owing to the continually increasing number of consignments arriving at the Port and the difficulty experienced by this Department in providing an officer for their inspection, these inspections during the latter half of the year were carried out by the Petroleum Inspector attached to the Marine Department.

The Petroleum Ordinance was amended in October, to make the inspection of receptacles discretionary instead of compulsory (Notification 1749—*Gazette* dated, 14th November, 1919).

(c) MINERAL TURPENE.

One thousand six hundred and eighty-six tins were imported into Singapore, as compared with 1,944 tins in 1918.

(d) LIQUID FUEL.

Ninety-six samples were tested for their flash-points as against 98 samples in 1918. Seventeen of the samples were further tested as to whether they were in accordance with the Admiralty Specification as regards their percentage of water.

(e) TESTING VESSELS FOR DANGEROUS PETROLEUM VAPOUR.

Forty vessels as against 42 in 1908 were tested for inflammable vapour by means of REDWOOD'S Standard Instrument, either before being allowed to enter Port limits under Rule 23 made under the Petroleum Ordinance, 1908, or to enter Dry Dock under By-law 77 of the Straits Settlements Ports Ordinance, 1912.

(f) TANK INSTALLATION AT PULO BUKOM.

One inspection was made during the year.

Explosives.

Seven consignments of explosives were tested on importation into Singapore in accordance with the Rules under the Arms and Explosives Ordinance, 1913.

All passed the prescribed tests.

The following table gives the details of these and, for the purpose of comparison, those imported and tested during the two preceding years:—

| Year. | Number of consignments. | Number of packages of 50 lbs. each. | | | | Total. | |
|-------|-------------------------|-------------------------------------|------------|--------------------|--------------------|--------|-------|
| | | Dynamite. | Gelignite. | Blasting Gelatine. | Gelatine Dynamite. | | |
| 1917 | ... | 2 | 100 | 2,111 | ... | 500 | 2,711 |
| 1918 | ... | 6 | 1,550 | 3,167 | ... | 1,713 | 6,430 |
| 1919 | ... | 7 | 400 | 1,200 | 1,000 | 120 | 2,720 |

In addition to the above, 990 cases of Gelignite and 1 case of Dynamite were tested here on importation into Penang.

One hundred and twenty-one cases of Detonators and 16,375 lbs. of Gun-powder were also imported during the year.

Minerals, Metals, etc.

Thirty-five samples of local minerals including Lead, Tin and Copper Ores, Stibnite, Coal, Wolframite and Quartz Sand and 3 of Metallic Alloy were assayed during the year.

Fifty-seven samples of minerals were sent in for identification.

Liquors.

Thirteen samples were sent in for examination and report.

(a) METHYLATED SPIRITS.

Six hundred and nine drums, equal to approximately 76,913 gallons of Arrack were methylated for industrial purposes, as against 585 drums, equal to approximately 63,595 gallons in 1918.

Counterfeit Coins.

Five sets of exhibits for counterfeit Straits Settlements subsidiary silver coins were sent in by the Police.

Forged Currency Notes.

Four sets of exhibits in connection with forgeries of 10-cent currency notes were received from the Chief Police Officer, Singapore.

A number of exhibits in a case of converting \$10 notes into \$50 notes by partial bleaching and subsequent re-colouring were also investigated.

In addition to the above a number of forged 10-cent notes were sent in by the Chief Police Officer, Muar.

Examination of Prisoners.

Twelve prisoners were brought to the Laboratory for the examination of their persons and clothes for stains likely to connect them with the manufacture of counterfeit coins or forged currency notes.

Chemicals, Drugs, Etc.

Twenty-four samples were sent in for analysis.

Four sets of exhibits seized by the Monopolies Department were reported upon.

Toxicology.

Nineteen specimens of Stomach Contents, Washings, etc., were received from the various hospitals in Singapore, Penang and Malacca.

Opium was detected in 4 cases, Tuba and Ptomaines in 2 cases each and strong soda-lye in one case.

Alcohol to the extent of 1.8 grains was recovered from one specimen.

Six specimens were received from the Government Veterinary Surgeon, Singapore.

Poisons.

Eight sets of exhibits, of which one came from Johore and another from North Kedah were sent in for investigation. They included 2 bottles of strong "Tuba" extract in a case of suicide.

Urine.

Twenty-seven specimens were sent in.

Water.

Ten samples were sent in for report as to their suitability for drinking purposes and 2 samples in connection with industrial processes.

Milk.

Three hundred and nineteen samples were received from the various hospitals, the Chief Police Officer, Singapore, and the Municipality of Singapore. Of these 119 samples were adulterated by the addition of water to the extent of from 1 per cent to 79 per cent.

Cane sugar was added to the extent of 1 per cent to 1½ per cent in 3 cases, in order to raise the specific gravities of the watered samples to approximately that of good milk. One sample was deficient in milk-fat.

Four samples of tinned-milk were sent in by importing firms.

Oils and Oil-Cakes.

Thirteen samples of Oils and one of Ground-nuts were sent in for analysis. One sample of Poonac Oil-cake was found to contain 10 per cent of coarse sand.

Damaged Goods.

Seven samples were sent in by various Marine Insurance Companies for proof as to whether they had been damaged by sea-water or otherwise.

Miscellaneous.

Other samples, not included under any of the above heads, which were sent in for analysis and report included:—Ten Test Meals, 5 cuttings taken from hides for export, 2 samples each of Gutta and Paint and 1 each of Sewage Sludge, Rice-dust, Sago Flour, White Beans, Rubber, Spent Oxide, Ultramarine, Indigo, Reboiled Jelutong, Bat Guano, a Sherry Cask, Police Badges and a Steel Pliers and Brass Padlock in a case of theft.

Staff.

The Laboratory Staff has been short-handed during practically the whole of the year and for 7 months has consisted of only my Laboratory Assistant, Mr. LIM CHOON SENG, and myself.

In consequence of this a large amount of work useful to the Public and remunerative to the Department has had to be refused.

GOVERNMENT ANALYTICAL DEPARTMENT, PENANG.

REPORT BY MR. J. C. COWAP, B.SC., F.I.C., *Deputy Analyst, Penang.*

Details of Revenue and Expenditure for the Department in 1919 are given in the following table with the Revenue for 1918 for comparison.

| Revenue. | 1918. | 1919. | Expenditure, 1919. |
|--|----------|----------|---|
| | \$ c. | \$ c. | \$ c. |
| Petroleum Inspection Fees | 2,515 00 | 2,240 75 | Personal Emoluments* 7,751 52 |
| Miscellaneous ... | 1,005 50 | 502 75 | Stores† ... 350 00 |
| Certificate for Export of Petroleum Fees ... | 249 00 | 279 00 | Miscellaneous ... 173 58 |
| | | | Transport & Traveling Allowances ... 239 79 |
| Total ... | 3,769 50 | 3,022 50 | Total ... 8,514 89 |

* Includes Immediate War Allowance and Temporary War Allowance. † Approximate.

One hundred and eighty-five reports on general analytical work were issued and 115 reports on petroleum tested.

Petroleum.

(a) KEROSENE.

Fifty-four consignments were tested for flash point on importation—All samples flashed above the Standard Temperature (73° F.)

Particulars of importations are given in the following table:—

| Description of Oil. | Number of Consignments. | Tons. | Gallons. |
|---------------------------------|-------------------------|-----------|-----------|
| American Case Oil ... | 1 | ... | 2,319,032 |
| American Bulk Oil ... | 4 | 4,367.08 | ... |
| <i>East Indian Oil in Tins.</i> | | | |
| Fish ... | 7 | ... | 20,000 |
| Lamp-Glass ... | 9 | ... | 25,200 |
| Crown ... | 3 | ... | 142,000 |
| Cock ... | 2 | ... | 32,000 |
| Dragon ... | 1 | ... | 16,000 |
| <i>East Indian Bulk Oil.</i> | | | |
| Sumatra ... | 17 | 6,182.30 | ... |
| Dragon ... | 7 | 872.88 | ... |
| Borneo ... | 3 | 2,162.98 | ... |
| Total ... | 54 | 13,585.24 | 2,554,232 |

(b) DANGEROUS PETROLEUM.

Fifty-four shipments of motor spirit totalling 645,400 gallons were examined during the year.

These included 1,392 gallons of aviation spirit, a new commodity in Penang.

(c) LIQUID FUEL AND HEAVY PETROLEUM.

Twenty-three cargoes of liquid fuel, solar oil, etc., were tested for flash point. All samples flashed above 150° F.

The total quantity imported was 3,916.41 tons and 55,150 gallons.

Spirits.

Seven hundred and sixty-seven samples of spirit, almost entirely of Chinese manufacture were examined for the Monopolies Department for the assessment of duty.

Fourteen other samples of brandy, illicit liquor, etc., were analysed for other purposes.

Toxicology.

Specimens of human viscera were analysed in 8 cases of suspected poisoning. Four of them were found to contain opium and in the other four no poison could be discovered.

Opium, Chandu and Bhang.

Twenty-one reports were made for the Monopolies Department on analyses of opium, chandu, chandu dross or medicines containing opium.

Seventeen reports were issued on cases of possession of bhang or substances containing bhang.

Blood Stains.

Thirteen exhibits were received from the Police for examination as to the presence of blood.

Water.

Only eight samples of water were analysed during the year.

Milk.

Twenty-nine samples of milk were examined. Nearly all were taken by the Municipal Inspectors from local milk sellers. Of these 26 were adulterated by the addition of water, in one case the added water being 75 per cent of the total volume of the mixture.

Miscellaneous.

The miscellaneous samples analysed included rice, toddy, soap, caustic soda, sodium sulphite, medicines and other commercial products.

Staff.

I was in charge from January 1st until April 2nd, when I went on leave. Mr. J. W. HADDON, then Assistant Government Analyst, Singapore, acted as Deputy Analyst from April 3rd until August 5th, when he was recalled to Singapore to take charge of the Government Opium Factory.

After that date the Chief Medical Officer was in general charge of the office laboratory and did the petroleum testing. The Assistant Superintendent, Government Monopolies, tested spirits for duty purposes but no other analytical work was done until my return on December 29th.

APPENDIX H.

REPORT ON THE KING EDWARD VII MEDICAL SCHOOL,
SINGAPORE, FOR 1919.

School Council.—Dr. S. H. R. LUCY went on leave in March and Dr. F. B. CROUCHER acted as President of the Council during his absence.

Mr. KOH SAN HIN was elected a member in place of Mr. LEE CHOON GUAN, resigned.

School Staff.—Dr. G. H. MACALISTER went home on leave in August and Dr. G. A. FINLAYSON, Government Pathologist, acted as Principal of the School. There were a few changes in the staff of part-time lecturers, Dr. F. B. CROUCHER becoming Lecturer in Midwifery in place of Dr. L. SMITH and Dr. G. E. BROOKE, Lecturer in Hygiene, being relieved by Dr. W. R. C. MIDDLETON. Lt.-Col. HULL, R.A.M.C., joined the staff in October, taking part in the Surgical teaching.

Mr. G. W. CRAWFORD, Lecturer in Pharmacy, owing to illness had to give up his class in October, and it was found impossible to replace him during the year.

Mr. A. J. THUMBOO, Tutor to Hospital Assistants and acting lecturer on Anatomy, resigned his post at the end of the year.

Students.—I regret to report the deaths, during 1919, of four students. KOH LEAN ANN died of an acute illness within a month of his final examination. A most promising career cut short.

V. VYTHILINGAM, after a long illness, died in March. M. J. MATHEWS and BHAN SINGH towards the end of the year. The latter was only at the very beginning of his medical course, but had already shown considerable aptitude for his studies.

Twenty-one students joined the school, making a total of 135.

Thirteen completed their course obtaining the diploma, of these 5 joined the Straits Service, and 4 the Federated Malay States Service. Four have gone into private practice.

One student left the school without completing his course.

The total number of licentiates is now 108.

Hospital Assistants.—Thirteen passed out with the certificate and 11 joined in June. Consequent upon a resolution of Council of September 5, 1919, subsequently approved by Government, the training of Hospital Assistants at the school has been discontinued.

Miscellaneous.—Four Dental candidates were awarded certificates.

Reform and Expansion.—Reports on reform of the curriculum, recommending expansion of staff, increased remuneration for lecturers and examiners, and provision of new buildings were approved by Government.

Certain new appointments were sanctioned and appear for the first time in the 1920 Estimates. To supply certain immediate deficiencies of apparatus a sum of \$6,200 was voted by Government, and to meet the increased expenditure, consequent upon increase of staff, etc., a sum of \$22,000 half from each Government was voted, and a similar sum will be available in future years.

General approval was given to the new building schemes, the cost of which was estimated at \$1,000,000.

FINANCIAL.

| | | | | | |
|--|-----|-----|-----|---------|----|
| <i>School Fund:—</i> | | | | \$ | c. |
| Investments | ... | ... | ... | 87,200 | 00 |
| Revenue | ... | ... | ... | 23,876 | 69 |
| Students' Fees | ... | ... | ... | 2,245 | 00 |
| <i>King Edward VII Memorial Fund:—</i> | | | | \$ | c. |
| Investments | ... | ... | ... | 101,800 | 00 |
| Revenue | ... | ... | ... | 25,201 | 41 |
| Bank Balance | ... | ... | ... | 25,734 | 18 |

APPENDIX I.

PATHOLOGICAL DEPARTMENT.

REPORT BY DR. G. A. FINLAYSON, M.A., M.B., Ch.B., M.R.C.P.,
Government Pathologist.

Laboratory, Sepoy Lines.

| | | | |
|--------------------------------------|-------------------|-----|-------|
| Total number of specimens examined | ... | ... | 3,306 |
| Widal's reaction (a) for "Enterica"— | | | |
| Typhoid fever | positive reaction | ... | 123 |
| | partial " | ... | 92 |
| | negative " | ... | 364 |
| | | | 579 |
| Para-typhoid fever A | positive " | ... | ... |
| | partial " | ... | 2 |
| | negative " | ... | 7 |
| | | | 9 |
| Para-typhoid fever B | positive " | ... | 2 |
| | partial " | ... | 2 |
| | negative " | ... | 5 |
| | | | 9 |
| (b) for dysentery | positive " | ... | 13 |
| | partial " | ... | 2 |
| | negative " | ... | 14 |
| | | | 29 |
| <i>Malaria:—</i> | | | |
| Parasite present | ... | ... | 33 |
| " absent | ... | ... | 110 |
| | | | 143 |
| <i>Diphtheria:—</i> | | | |
| K. L. B. present | ... | ... | 24 |
| " absent | ... | ... | 39 |
| | | | 63 |
| <i>Gonorrhoea:—</i> | | | |
| Gonococcus present | ... | ... | 22 |
| " absent | ... | ... | 63 |
| | | | 85 |

Syphilis :—

| | | | |
|-----------------------------------|-----|-------|-------|
| Wassermann reaction, positive ... | ... | 902 | |
| partial ... | ... | 114 | |
| negative ... | ... | 731 | |
| | | <hr/> | 1,747 |

Sputum :—

| | | | |
|-----------------------|-----|-------|----|
| T. B. ... present ... | ... | 15 | |
| " absent ... | ... | 56 | |
| | | <hr/> | 71 |

| | | | |
|------------------------------------|-----|-------|----|
| Influenza bacillus ... present ... | ... | 4 | |
| " absent ... | ... | 10 | |
| | | <hr/> | 14 |

| | | | |
|------------------------------|-----|-------|---|
| Pneumococcus ... present ... | ... | 3 | |
| " absent ... | ... | 6 | |
| | | <hr/> | 9 |

Leprosy :—

| | | | |
|---------------------------------|-----|-------|----|
| Bacillus Leproe ... present ... | ... | 19 | |
| " absent ... | ... | 26 | |
| | | <hr/> | 45 |

Plague :—

| | | | |
|---------------------------------|-----|-------|---|
| Bacillus Pestis ... present ... | ... | 2 | |
| " absent ... | ... | 3 | |
| | | <hr/> | 5 |

Fæces :—

| | | | |
|-------------------------------|-----|-------|----|
| Amœba Histolytica present ... | ... | 5 | |
| " absent ... | ... | 69 | |
| | | <hr/> | 74 |

| | | | |
|-----------------------------------|-----|-------|---|
| Tubercle bacillus ... present ... | ... | 1 | |
| " absent ... | ... | 3 | |
| | | <hr/> | 4 |

| | | | |
|---------------------|-----|-------|----|
| Ova ... present ... | ... | 23 | |
| " absent ... | ... | 23 | |
| | | <hr/> | 46 |

| | | | |
|--------------------------------|-----|-------|----|
| Lambliæ .. present ... | ... | 5 | |
| Cholera vibrio ... present ... | ... | 10 | |
| " negative... | ... | 2 | |
| | | <hr/> | 17 |

| | | | |
|--------------------------------------|-----|-------|----|
| Bacillus Dysenterica ... present ... | ... | 13 | |
| " absent ... | ... | 78 | |
| Bacillus Typhosus " ... | ... | 3 | |
| | | <hr/> | 94 |

Urine :—

| | | | |
|-------------------------------------|-----|-------|-----|
| Casts, etc. ... | ... | 80 | |
| Tubercle bacillus ... present ... | ... | 1 | |
| " absent ... | ... | 12 | |
| Bacillus Coli, etc. ... present ... | ... | 30 | |
| | | <hr/> | 123 |

Cerebro-spinal fluid :—

| | | | |
|-------------------------------|-----|-------|----|
| Meningococcus ... present ... | ... | 18 | |
| " absent ... | ... | 15 | |
| | | <hr/> | 33 |

Pus (Hepatic abscess) :—

| | | | |
|-------------------|-----|-----|---|
| Amœba present ... | ... | ... | 3 |
| „ absent ... | ... | ... | 4 |

7

Varied :—

| | | | |
|------------------------------------|-----|-----|----|
| Vaccine prepared ... | ... | ... | 15 |
| Differential leucocytic count ... | ... | ... | 11 |
| Blood culture ... | ... | ... | 4 |
| Histological specimens ... | ... | ... | 66 |
| Examination of water samples ... | ... | ... | 21 |
| Precipitin test for human blood... | ... | ... | 3 |

Mortuary, Sepoy Lines.*Return showing immediate cause of death.*

| | | | |
|--------------------------------|-----|-----|-----------|
| Beri-beri ... | ... | ... | 10 |
| Lobar Pneumonia ... | ... | ... | 10 |
| Malaria ... | ... | ... | 9 |
| Tuberculosis ... | ... | ... | 21 |
| Enteric Fever ... | ... | ... | 7 |
| Dysentery ... | ... | ... | 11 |
| Suppurative Peritonitis ... | ... | ... | 8 |
| Other septic conditions ... | ... | ... | 2 |
| Diseases of nervous system ... | ... | ... | 3 |
| „ „ respiratory „ ... | ... | ... | 26 |
| „ „ circulatory „ ... | ... | ... | 8 |
| „ „ alimentary „ ... | ... | ... | 3 |
| „ „ genito-urinary system ... | ... | ... | 4 |
| Neoplasm ... | ... | ... | 2 |
| Syphilis ... | ... | ... | 1 |
| Schistosomiasis ... | ... | ... | 1 |
| Ankylostomiasis ... | ... | ... | 1 |
| Black-water fever ... | ... | ... | 1 |
| Leprosy ... | ... | ... | 1 |
| Splenic anæmia ... | ... | ... | 1 |
| Accidents, varied ... | ... | ... | 65 |
| Unknown (decomposed) ... | ... | ... | 2 |
| | | | Total 197 |

Return showing incidence of diseases.

| | | | |
|-------------------------------|-----|-----|----|
| Beri-beri ... | ... | ... | 10 |
| Enteric Fever ... | ... | ... | 9 |
| Pigmented Peyer's patches ... | ... | ... | 1 |
| Malaria—acute ... | ... | ... | 10 |
| „ chronic ... | ... | ... | 6 |
| Dysentery, amœbic—acute ... | ... | ... | 6 |
| „ „ chronic ... | ... | ... | 5 |
| „ bacillary—acute ... | ... | ... | 3 |
| „ mixed „ ... | ... | ... | 1 |

| | | | | |
|----------------------|-----|-----|-----|----|
| Pneumonia—lobar | ... | ... | ... | 13 |
| Sapraemia | ... | ... | ... | 1 |
| Septicaemia | ... | ... | ... | 1 |
| Schistosomiasis | ... | ... | ... | 1 |
| Syphilis | ... | ... | ... | 1 |
| Ankylostomiasis | ... | ... | ... | 2 |
| Black-water fever | ... | ... | ... | 1 |
| Leprosy | ... | ... | ... | 1 |
| Neoplasm | ... | ... | ... | 4 |
| Splenic anæmia | ... | ... | ... | 1 |
| Tuberculosis—general | ... | ... | ... | 1 |
| " miliary | ... | ... | ... | 1 |

A.—Nervous System.

| | | | | |
|---------------------|-----|-----|-----|---|
| Hæmorrhage—cerebral | ... | ... | ... | 1 |
| " meningeal | ... | ... | ... | 2 |
| Myelitis | ... | ... | ... | 1 |
| Meningitis—septic | ... | ... | ... | 1 |
| " pneumococcic | ... | ... | ... | 1 |
| " tuberculous | ... | ... | ... | 4 |

B.—Circulatory System.

| | | | | |
|--------------------------------------|-----|-----|-----|----|
| Aneurism—Celiac axis | ... | ... | ... | 1 |
| Aneurismal dilatation—Aortic | ... | ... | ... | 2 |
| Atheroma and syphilitic endarteritis | ... | ... | ... | 12 |
| Chronic lymphoid leucamia | ... | ... | ... | 1 |
| Endocarditis—chronic | ... | ... | ... | 2 |
| " ulcerative | ... | ... | ... | 1 |
| Pericarditis—acute—pneumococcic | ... | ... | ... | 3 |

C.—Respiratory System.

| | | | | |
|--|-----|-----|-----|----|
| Abscess—pulmonary—extension from liver | ... | ... | ... | 1 |
| Atelectasis | ... | ... | ... | 1 |
| Bronchitis (influenzal) | ... | ... | ... | 2 |
| Bronchiectasis | ... | ... | ... | 2 |
| Broncho-pneumonia—septic | ... | ... | ... | 1 |
| " influenzal | ... | ... | ... | 4 |
| " ordinary | ... | ... | ... | 19 |
| Tuberculosis—lung | ... | ... | ... | 22 |
| " larynx | ... | ... | ... | 2 |
| Empyema—stabwound | ... | ... | ... | 1 |
| " pneumococcic | ... | ... | ... | 2 |
| " hepatic abscess | ... | ... | ... | 1 |
| Pleurisy—non-tuberculous—acute | ... | ... | ... | 9 |
| " " chronic | ... | ... | ... | 4 |
| " tuberculous | ... | ... | ... | 13 |
| Lobar pneumonia | ... | ... | ... | 13 |
| " acute | ... | ... | ... | 2 |
| " chronic | ... | ... | ... | 2 |
| Hypostatic pneumonia | ... | ... | ... | 1 |

D.—Digestive System.

| | | | | |
|------------------|-----|-----|-----|---|
| Hepatic abscess | ... | ... | ... | 1 |
| Biliary calculus | ... | ... | ... | 2 |
| Cholecystitis | ... | ... | ... | 4 |
| Cholangitis | ... | ... | ... | 2 |
| Cysts—hepatic | ... | ... | ... | 1 |

| | | | | |
|------------------------------------|-----|-----|-----|----|
| Hepatic cirrhosis | ... | ... | ... | 2 |
| Inguinal hernia (one strangulated) | ... | ... | ... | 2 |
| Infarct spleen | ... | ... | ... | 1 |
| Stomatitis—acute | ... | ... | ... | 1 |
| Stricture rectum (dysenteric) | ... | ... | ... | 1 |
| Tuberculosis—small gut | ... | ... | ... | 8 |
| large „ | ... | ... | ... | 1 |
| spleen | ... | ... | ... | 1 |
| mesenteric gland | ... | ... | ... | 2 |
| Gastric ulcer | ... | ... | ... | 1 |
| Acute general peritonitis | ... | ... | ... | 10 |
| enteric perforation | ... | ... | 2 | |
| gallstone | ... | ... | 1 | |
| traumatic | ... | ... | 2 | |
| cholangitis | ... | ... | 1 | |
| ectopic gestation | ... | ... | 1 | |
| dysentery | ... | ... | 2 | |
| unknown | ... | ... | 1 | |
| Acute localised peritonitis | ... | ... | ... | 2 |
| hernia | ... | ... | 1 | |
| dysentery | ... | ... | 1 | |
| Chronic general peritonitis | ... | ... | ... | 1 |

E.—Genito-urinary System.

| | | | | |
|-----------------------------|-----|-----|-----|---|
| Abortion (traumatic) | ... | ... | ... | 1 |
| Cystitis | ... | ... | ... | 1 |
| Interstitial nephritis | ... | ... | ... | 5 |
| Parenchymatous nephritis | ... | ... | ... | 3 |
| Tuberculosis—genito-urinary | ... | ... | ... | 1 |
| Pyelonephritis | ... | ... | ... | 1 |
| Ectopic gestation | ... | ... | ... | 1 |

K.—Varied Conditions.

| | | | | |
|--------------------------------|-----|-----|-----|---|
| Psoas abecess | ... | ... | ... | 1 |
| Otitis media | ... | ... | ... | 1 |
| Tuberculosis—sacro-iliac joint | ... | ... | ... | 1 |
| Morphine injection abscess | ... | ... | ... | 1 |
| Chronic ulcer leg | ... | ... | ... | 1 |
| Clonorchis Sinensis | ... | ... | ... | 2 |
| Ankylostoma duodenale | ... | ... | ... | 6 |
| Ascaris Lumbricoides | ... | ... | ... | 9 |

H.—Affections produced by external causes.

| | | | | |
|---------------------------|-----|-----|-----|----|
| Asphyxia—delayed delivery | ... | ... | ... | 1 |
| produced by weight | ... | ... | ... | 1 |
| strangulation | ... | ... | ... | 1 |
| Burns | ... | ... | ... | 1 |
| Drowning | ... | ... | ... | 13 |
| Gunshot wound | ... | ... | ... | 4 |
| Multiple injuries | ... | ... | ... | 6 |

| | | | | | |
|-------------------------------------|-----|-----|-----|-------|-----|
| Stab wound | ... | ... | ... | ... | 4 |
| Cut throat | ... | ... | ... | ... | 1 |
| <i>Fracture:—</i> | | | | | |
| Spine | ... | ... | ... | 2 | |
| skull | ... | ... | ... | 18 | |
| femur | ... | ... | ... | 2 | |
| rib | ... | ... | ... | 4 | |
| sternum | ... | ... | ... | 1 | |
| tibia | ... | ... | ... | 1 | |
| ileum | ... | ... | ... | 1 | |
| fracture dislocation spine | ... | ... | ... | 1 | |
| | | | | <hr/> | 30 |
| Poison | ... | ... | ... | ... | 3 |
| <i>Rupture:—</i> | | | | | |
| spleen | ... | ... | ... | 5 | |
| liver | ... | ... | ... | 3 | |
| lung | ... | ... | ... | 1 | |
| intercostal artery | ... | ... | ... | 1 | |
| heart | ... | ... | ... | 1 | |
| gut | ... | ... | ... | 1 | |
| Middle meningeal artery | ... | ... | ... | 1 | |
| kidney | ... | ... | ... | 1 | |
| | | | | <hr/> | 14 |
| Deaths within 48 hours of admission | ... | ... | ... | ... | 12 |
| Do. 24 do. | ... | ... | ... | ... | 47 |
| Brought in dead | ... | ... | ... | ... | 73 |
| Inquest cases | ... | ... | ... | ... | 110 |

Mortuary, Tan Tock Seng's Hospital.

Return showing immediate cause of death.

| | | | | | |
|----------------------------|-----|-----|-----|-----|-----|
| Beri-beri | ... | ... | ... | ... | 27 |
| Lobar Pneumonia | ... | ... | ... | ... | 42 |
| Cerebro-spinal meningitis | ... | ... | ... | ... | 5 |
| Accidents, varied | ... | ... | ... | ... | 40 |
| Tuberculosis | ... | ... | ... | ... | 57 |
| Enteric fever | ... | ... | ... | ... | 20 |
| Diseases of Nervous system | ... | ... | ... | ... | 12 |
| " Circulatory " | ... | ... | ... | ... | 36 |
| " Respiratory " | ... | ... | ... | ... | 68 |
| " Alimentary " | ... | ... | ... | ... | 40 |
| " Genito-urinary system | ... | ... | ... | ... | 23 |
| Varied septic conditions | ... | ... | ... | ... | 26 |
| Syphilis | ... | ... | ... | ... | 5 |
| Malaria | ... | ... | ... | ... | 43 |
| Dysentery | ... | ... | ... | ... | 102 |
| Plague | ... | ... | ... | ... | 2 |
| Cholera | ... | ... | ... | ... | 5 |
| Suppurative peritonitis | ... | ... | ... | ... | 22 |
| Ankylostomiasis | ... | ... | ... | ... | 9 |
| Schistosomiasis | ... | ... | ... | ... | 3 |
| Neoplasm | ... | ... | ... | ... | 29 |

| | | | | | |
|----------------|-----|-----|-----|-----|---|
| Senility | ... | ... | ... | ... | 1 |
| Splenic anæmia | ... | ... | ... | ... | 1 |
| Unknown | ... | ... | ... | ... | 2 |

Return showing incidences of diseases.

| | | | | | |
|---------------------------|-----|-----|-----|-------|-----|
| Beri-beri | ... | ... | ... | ... | 28 |
| Dysentery | ... | ... | ... | ... | 164 |
| Amœbic—acute | ... | ... | ... | 27 | |
| " chronic | ... | ... | ... | 85 | |
| Bacillary—acute | ... | ... | ... | 25 | |
| " chronic | ... | ... | ... | 2 | |
| Mixed—acute | ... | ... | ... | 7 | |
| " chronic | ... | ... | ... | 14 | |
| Malarial | ... | ... | ... | 1 | |
| Schistosomiasis | ... | ... | ... | 3 | |
| | | | | <hr/> | 164 |
| Enteric fever | ... | ... | ... | ... | 25 |
| Pigmented Peyer's patches | ... | .. | ... | ... | 15 |
| Malaria | ... | ... | ... | ... | 103 |
| Acute sub-tertian | ... | ... | ... | 36 | |
| " benign tertian | ... | ... | ... | 2 | |
| " quartan | ... | ... | ... | 2 | |
| " mixed | ... | ... | ... | 1 | |
| " unclassified | ... | ... | ... | 1 | |
| Chronic ... | ... | ... | ... | 53 | |
| Pigment only detected | ... | ... | ... | 8 | |
| | | | | <hr/> | 103 |
| Ankylostomiasis | ... | ... | ... | ... | 20 |
| Schistosomiasis | ... | ... | ... | ... | 3 |
| Sapræmia | ... | ... | ... | ... | 17 |
| Septicæmia | ... | ... | ... | ... | 1 |
| Pyæmia | ... | ... | ... | ... | 3 |
| Tuberculosis—general | ... | ... | ... | ... | 7 |
| " miliary | ... | ... | ... | ... | 1 |
| Senility | ... | ... | ... | ... | 1 |
| Plague | ... | ... | ... | ... | 2 |
| Cholera | ... | ... | ... | ... | 5 |
| Cerebro-spinal meningitis | ... | ... | ... | ... | 5 |

A.—Nervous System.

| | | | | | |
|---------------------------------|-----|-----|-----|-----|----|
| Cerebral abscess | ... | ... | ... | ... | 1 |
| " softening | ... | ... | ... | ... | 6 |
| " thrombosis | ... | ... | ... | ... | 1 |
| " gumma | ... | ... | ... | ... | 4 |
| " hæmorrhage (one traumatic) | ... | ... | ... | ... | 6 |
| Meningitis | ... | ... | ... | ... | 15 |
| pneumococcic | ... | ... | ... | 3 | |
| septic | ... | ... | ... | 4 | |
| tuberculous | ... | ... | ... | 3 | |
| cerebo-spinal | ... | ... | ... | 5 | |

| | | | | |
|------------------------------|-----|-----|-----|---|
| Myelitis | ... | ... | ... | 2 |
| T. B. brain (miliary) | ... | ... | ... | 1 |
| Melanotic sarcoma (cerebral) | ... | ... | ... | 1 |
| Cancer (dura mater) | ... | ... | ... | 1 |

B.—Circulatory System.

| | | | | |
|------------------------------------|-----|-----|-----|-----|
| Anæmia, splenic | ... | ... | ... | 1 |
| Aneurismal dilatation, aortic | ... | ... | ... | 17 |
| Aneurism— | | | | |
| Heart | ... | ... | ... | 2 |
| Aorta | ... | ... | ... | 8 |
| Coeliac Axis | ... | ... | ... | 1 |
| Carotid | ... | ... | ... | 1 |
| | | | — | 12 |
| Atheroma and syphilis endarteritis | ... | ... | ... | 113 |
| Brown atrophy of heart | ... | ... | ... | 2 |
| Fatty heart | ... | ... | ... | 1 |
| Gumma, heart | ... | ... | ... | 4 |
| Endocarditis, ulcerative | ... | ... | ... | 8 |
| " chronic | ... | ... | ... | 19 |
| Myocarditis, syphilitic | ... | ... | ... | 6 |
| Pericarditis, acute | ... | ... | ... | 9 |
| " chronic | ... | ... | ... | 5 |
| " Tuberculous | ... | ... | ... | 2 |
| " Syphilitic | ... | ... | ... | 4 |
| Sarcoma (melanotic) heart | ... | ... | ... | 1 |
| Thrombosis, septic | ... | ... | ... | 1 |
| " Portal | ... | ... | ... | 2 |
| " Auricular appendix... | ... | ... | ... | 1 |
| " cerebral | ... | ... | ... | 1 |
| Lymphangitis, acute | ... | ... | ... | 1 |

C.—Respiratory System.

| | | | | |
|-----------------------------|-----|-----|-----|----|
| Abscess, pulmonary | ... | ... | ... | 3 |
| " retro-pharyngeal | ... | ... | ... | 1 |
| Bronchiectasis | ... | ... | ... | 1 |
| Bronchitis, chronic | ... | ... | ... | 8 |
| Broncho-pneumonia, ordinary | ... | ... | ... | 63 |
| " influenzal | ... | ... | ... | 12 |
| " dysenteric | ... | ... | ... | 2 |
| " septic | ... | ... | ... | 1 |
| Empyema— | | | | |
| tuberculous | ... | ... | ... | 3 |
| hepatic abscess | ... | ... | ... | 2 |
| pneumococcic | ... | ... | ... | 8 |
| traumatic | ... | ... | ... | 1 |
| | | | — | 14 |
| Carnification of lung | ... | ... | ... | 1 |
| Marked emphysema | ... | ... | ... | 16 |
| Pulmonary gangrene | ... | ... | ... | 6 |
| " infarct | ... | ... | ... | 2 |
| " collapse | ... | ... | ... | 7 |
| Mediastinal sarcoma | ... | ... | ... | 2 |
| Cancer, lung | ... | ... | ... | 1 |

| | |
|--|-------|
| Pyopneumothorax (one tuberculous) | 2 |
| Pneumothorax | 2 |
| Pleurisy (non-tuberculous)— | |
| " acute | 62 |
| " chronic | 92 |
| | — 154 |
| " (tuberculous)— | |
| " acute | 2 |
| " chronic | 67 |
| " quiescent | 1 |
| | — 70 |
| Marked pleural effusion | 20 |
| Lobar pneumonia, acute— | |
| right side complete | 3 |
| " upper lobe | 1 |
| " middle " | 1 |
| " upper and middle lobe } | 1 |
| " lower lobe | 4 |
| left side complete | 1 |
| " upper lobe | 2 |
| " lower " | 4 |
| both sides | |
| right and left upper lobes | 1 |
| " " lower " | 3 |
| " middle and left lower | 1 |
| right lower lobe and left lung complete | 1 |
| | — 23 |
| Chronic lobar pneumonia— | |
| right side complete | 2 |
| " upper lobe | 1 |
| " middle " | 1 |
| " upper and middle lobe | 3 |
| " lower lobe | 6 |
| " middle and lower lobe | 1 |
| left side complete | 2 |
| " upper lobe | 3 |
| " lower " | 10 |
| both sides whole pulmonary substance | 1 |
| right and left lower lobes | 1 |
| | — 31 |
| Hypostatic pneumonia | 5 |
| Tuberculosis of lung, active | 87 |
| " quiescent | 5 |
| | } 92 |
| " larynx | 13 |
| " trachea | 1 |
| Stricture of larynx (syphilitic) | 1 |

D.—Digestive System.

| | | | | |
|----------------------------------|-----|-----|-----|----|
| Abscess, pericæcal | ... | ... | ... | 1 |
| " perisigmoid | ... | ... | ... | 1 |
| Ulcer stomach | ... | ... | ... | 7 |
| Intussusception | ... | ... | ... | 1 |
| Cancer stomach | ... | ... | ... | 6 |
| Gastritis, acute | ... | ... | ... | 1 |
| Gastro-enteritis | ... | ... | ... | 1 |
| Entero-colitis, acute | ... | ... | ... | 2 |
| Colitis | ... | ... | ... | 6 |
| Cancer, cæcum | ... | ... | ... | 1 |
| Hæmorrhoids | ... | ... | ... | 1 |
| Appendicitis, acute | ... | ... | ... | 4 |
| Stricture of rectum (dysenteric) | ... | ... | ... | 2 |
| Inguinal hernia | ... | ... | ... | 4 |
| Tuberculosis, mesenteric glands | ... | ... | ... | 7 |
| " small gut | ... | ... | ... | 47 |
| " large " | ... | ... | ... | 9 |
| " liver | ... | ... | ... | 9 |
| " spleen | ... | ... | ... | 9 |
| " peritoneum | ... | ... | ... | 5 |
| Nutmeg liver (well marked) | ... | ... | ... | 2 |
| Angioma " | ... | ... | ... | 1 |
| Cholangitis, acute | ... | ... | ... | 8 |
| Cholecystitis | ... | ... | ... | 4 |
| Hepatic cirrhosis | ... | ... | ... | 39 |
| syphilitic | ... | ... | ... | 8 |
| schistosomiac | ... | ... | ... | 3 |
| other varieties | ... | ... | ... | 28 |
| Fatty liver | ... | ... | ... | 9 |
| Cancer liver (primary) | ... | ... | ... | 15 |
| Gumma " | ... | ... | ... | 2 |
| " spleen | ... | ... | ... | 3 |
| Perihepatitis, chronic | ... | ... | ... | 15 |
| Perisplenitis " | ... | ... | ... | 27 |
| Calculus, biliary | ... | ... | ... | 4 |
| Abscess, liver, amœbic | ... | ... | ... | 12 |
| " " septic | ... | ... | ... | 1 |
| Congenital cysts in liver | ... | ... | ... | 2 |
| Splenic infarct | ... | ... | ... | 16 |
| " abscess | ... | ... | ... | 1 |
| Lymphosarcoma, gut | ... | ... | ... | 1 |
| " liver | ... | ... | ... | 1 |
| Melanotic sarcoma, pancreas | ... | ... | ... | 1 |
| " " mesentery | ... | ... | ... | 1 |
| Peritonitis—acute general— | | | | |
| septic | ... | ... | ... | 6 |
| perforated enteric ulcer | ... | ... | ... | 4 |
| " tuberculous ulcer | ... | ... | ... | 2 |
| " sarcoma | ... | ... | ... | 1 |
| appendicitis | ... | ... | ... | 3 |
| dysenteric | ... | ... | ... | 5 |
| rupture gut (traumatic) | ... | ... | ... | 2 |
| pneumococcic | ... | ... | ... | 1 |
| hernia | ... | ... | ... | 1 |
| from other causes | ... | ... | ... | 5 |

| | | | | |
|---|-----|-----|-------|----|
| Peritonitis—acute localised— | | | | |
| dysenteric | ... | ... | 3 | |
| cholangitis | ... | ... | 1 | |
| | | | <hr/> | 4 |
| chronic general from gunshot wound | ... | ... | ... | 1 |
| " localised— | | | | |
| from dysentery | | | 5 | |
| " gastric ulcer | | | 1 | |
| " liver abscess | | | 1 | |
| | | | <hr/> | 7 |
| General tuberculous peritonitis | ... | ... | ... | 5 |
| Marked ascites | ... | ... | ... | 31 |
| <i>E.—Diseases of genito-urinary system.</i> | | | | |
| Nephrolithiasis | ... | ... | ... | 2 |
| Nephritis—parenchymatous | ... | ... | ... | 22 |
| " interstitial | ... | ... | ... | 35 |
| Pyonephrosis | ... | ... | ... | 2 |
| Pyelonephritis | ... | ... | ... | 4 |
| Gumma—testis | ... | ... | ... | 1 |
| " kidney | ... | ... | ... | 1 |
| Tuberculosis—kidney | ... | ... | ... | 6 |
| " ureter | ... | ... | ... | 2 |
| " bladder | ... | ... | ... | 2 |
| Uræmia | ... | ... | ... | 1 |
| Renal calculus | ... | ... | ... | 4 |
| Cystitis—acute | ... | ... | ... | 5 |
| Polypus—bladder | ... | ... | ... | 1 |
| Infarct—kidney | ... | ... | ... | 2 |
| Hæmatocele | ... | ... | ... | 1 |
| Epithelioma—penis | ... | ... | ... | 1 |
| Lymphosarcoma—kidney | ... | ... | ... | 1 |
| <i>H.—Affections produced by external causes.</i> | | | | |
| Asphyxia—strangulation | ... | ... | ... | 2 |
| " drowning | ... | ... | ... | 2 |
| " hanging | ... | ... | ... | 4 |
| Fracture— | | | | |
| skull | ... | ... | ... | 3 |
| spine | ... | ... | ... | 2 |
| rib | ... | ... | ... | 4 |
| femur | ... | ... | ... | 2 |
| radius | ... | ... | ... | 1 |
| tibia | ... | ... | ... | 1 |
| fibula | ... | ... | ... | 1 |
| | | | <hr/> | 14 |
| Multiple injuries | ... | ... | ... | 5 |
| Gunshot wounds | ... | ... | ... | 2 |
| Rupture (traumatic)— | | | | |
| aorta | ... | ... | ... | 1 |
| lung | ... | ... | ... | 1 |
| gut | ... | ... | ... | 1 |
| spleen | ... | ... | ... | 4 |
| liver | ... | ... | ... | 1 |
| | | | <hr/> | 8 |
| Cut throat | ... | ... | ... | 2 |
| Stab wounds— | | | | |
| into heart | ... | ... | ... | 5 |
| " lung | ... | ... | ... | 4 |
| " fore arm | ... | ... | ... | 1 |
| " liver | ... | ... | ... | 1 |
| | | | <hr/> | 11 |
| Poison | ... | ... | ... | 2 |

K.—Various conditions.

| | | | | |
|------------------------------------|-----|-----|-----|----|
| Abscess— | | | | |
| psoas | ... | ... | ... | 2 |
| ileopsöas | ... | ... | ... | 3 |
| iliac | ... | ... | ... | 2 |
| knee | ... | ... | ... | 1 |
| gluteal | ... | ... | ... | 1 |
| groin | ... | ... | ... | 1 |
| | | | | 10 |
| Cellulitis—lower limbs | ... | ... | ... | 3 |
| Erysipelas | ... | ... | ... | 1 |
| Gangrene trunk | ... | ... | ... | 2 |
| „ limbs | ... | ... | ... | 7 |
| Gumma—sternum | ... | ... | ... | 2 |
| „ clavicle | ... | ... | ... | 1 |
| Tuberculosis—hip joint | ... | ... | ... | 1 |
| „ spine | ... | ... | ... | 6 |
| Chronic arthritis | ... | ... | ... | 2 |
| Ankylosis joint | ... | ... | ... | 2 |
| Elephantiasis | ... | ... | ... | 1 |
| Gonorrhœa | ... | ... | ... | 1 |
| Necrosis of bone | ... | ... | ... | 2 |
| Synovitis | ... | ... | ... | 1 |
| Leucoderma | ... | ... | ... | 1 |
| Chronic ulcers— | | | | |
| trunk | ... | ... | ... | 4 |
| limbs | ... | ... | ... | 13 |
| | | | | 17 |
| Accessory ureter | ... | ... | ... | 1 |
| Scoliosis | ... | ... | ... | 1 |
| Cancer—neck | ... | ... | ... | 2 |
| „ base of skull | ... | ... | ... | 1 |
| „ thigh | ... | ... | ... | 2 |
| „ palate | ... | ... | ... | 1 |
| „ cheek | ... | ... | ... | 1 |
| Sarcoma jaw | ... | ... | ... | 2 |
| „ retroperitoneal gland | ... | ... | ... | 1 |
| Melanotic sarcoma—jaw | ... | ... | ... | 1 |
| Anthelmiasis:— | | | | |
| Ankylostoma duodenale | ... | ... | ... | 49 |
| Ascaris lumbricoides | ... | ... | ... | 36 |
| Trichocephalus dispar | ... | ... | ... | 4 |
| Tænia saginata | ... | ... | ... | 1 |
| Schistosomum Japonicum | ... | ... | ... | 3 |
| Clonorchis Sinensis | ... | ... | ... | 5 |
| Death within 48 hours of admission | ... | ... | ... | 58 |
| „ „ 24 „ „ | ... | ... | ... | 85 |
| Brought in dead | ... | ... | ... | 36 |
| Inquest cases | ... | ... | ... | 49 |

As in previous years a partial post-mortem examination was made to confirm the diagnosis in a considerable number of cases. Regarding the routine work carried out in the laboratory, I desire to draw special attention to the evidence of syphilis, particularly as regards the entrants into Tan Tock Seng Hospital from which the great majority of blood specimens were sent. The late Dr. KEITH in a prior report proved that this disease was of great ætiological importance in the cases admitted for treatment into the Lunatic Asylum.

The figures for past three years are as follows:—

| <i>Wassermann reaction.</i> — | | | 1917. | 1918. | 1919. |
|-------------------------------|-----|-----|-------|-------|-------|
| positive | ... | ... | 400 | 729 | 902 |
| partial | ... | ... | 53 | 100 | 114 |
| negative | ... | ... | 301 | 725 | 731 |

This in no way indicates an increase in the disease; merely a greater number of examinations have been carried out. A suggestive piece of work would be the examination of each individual who entered Tan Tock Seng's Hospital. But this can only be done by an extension of the department, an assistant being detailed to conduct Wassermann reactions in say 10,000 cases yearly. Without doubt—the percentage of the coolie class infected by the specific trepanoms is high, but reliable figures are sadly lacking, and it is only by instituting a sub-department on such lines that one can determine the effect of this virus on the Chinese population.

APPENDIX J.

REPORT OF THE MEDICAL DEPARTMENT, LABUAN, FOR THE YEAR 1919.

Population and Health.—

| Year. | Estimated Population. | Births. | Deaths. | Birth-rate. | Death-rate. |
|-------------|-----------------------|---------|---------|-------------|-------------|
| 1917 | 6,796 | 210 | 264 | 30·90 | 38·84 |
| 1918 | 6,848 | 249 | 198 | 36·36 | 28·91 |
| 1919 | 6,922 | 219 | 140 | 31·63 | 20·22 |

The Birth-rate was highest during the second quarter, and the death-rate during the fourth quarter. Of the total number of deaths, Malaria accounted for 26, Influenza 4, Debility and Age 27, Convulsions 19, Phthisis 37, Unknown and Other Causes 27.

The year under review is the healthiest on record for Labuan.

The Mortality under one year of age is 29 as against 59 in 1918.

The following table shows the Infantile Mortality under 1 year of age:—

| Year. | Deaths. | Percentage to total death-rate. | Percentage to total birth-rate. |
|-------------|---------|---------------------------------|---------------------------------|
| 1917 | 92 | 34·84 | 43·81 |
| 1918 | 59 | 29·79 | 23·69 |
| 1919 | 29 | 20·71 | 13·24 |

There was 1 still-birth during the year as against 6 in 1918. The causes of deaths amongst infants under 1 year of age were as follows:—

Malaria 6, Convulsions 14, Inanition 3, Other causes and Unknown 6.

Malaria.—Fifty-five cases were admitted to hospital during the year as against 47 in 1918. Five cases were treated as out-patients as against 197 in 1918. Of the total number of deaths, 26 were attributed to this disease as against 54 in 1918.

A sum of \$964.54 was spent by the Rural Board for clearing empty tins, etc., in connection with Anti-malarial works.

Beri-beri.—There was only one admission during the year as against 5 in 1918. Par-boiled rice was continued throughout the year.

The following table shows the number of admissions for the past 4 years:—

| | | | | | | |
|------|-----|-----|-----|-----|-----|----|
| 1916 | ... | ... | ... | ... | ... | 21 |
| 1917 | ... | ... | ... | ... | ... | 42 |
| 1918 | ... | ... | ... | ... | ... | 5 |
| 1919 | ... | ... | ... | ... | ... | 1 |

Veneral Diseases.—Eight cases were treated during the year being the same number as last year. Only one case was treated as out-patient.

Pulmonary Tuberculosis.—Four cases were treated in hospital during the year with 1 death as against 6 with 2 deaths in 1918. Thirty-seven of the total number of deaths were due to this disease showing a death-rate of 26.42 as against 13.13 in 1918. Many of these cases were above adult age.

Dysentery.—There were 3 admissions with 3 deaths as against 2 with no deaths in 1918.

Port Health Work.—Eight ships were inspected during the year and pratique granted. The s.s. *Kajang* arrived on 25th October, 1919, with one native case of Small-pox. This case was isolated in the hospital building.

Six bills of health were issued.

| | | | |
|----------------------------------|-----|-------|-------|
| <i>Police Force</i> :— | | 1919. | 1918. |
| | | — | — |
| Number of admissions to hospital | ... | 84 | 47 |
| „ „ out-patients | ... | 106 | 204 |
| „ „ admissions for Malaria | ... | 24 | 21 |
| „ „ out-patients for „ | ... | 15 | 59 |
| <i>Prisoners</i> :— | | 1919. | 1918. |
| | | — | — |
| Number admitted to hospital | ... | 19 | 19 |
| „ of out-patients | ... | 27 | 63 |
| „ admitted for Malaria | ... | 8 | 4 |

Out-patients.—Five hundred and ninety-five cases were treated as out-patients during the year as against 706 in 1918. Nationalities are as follows:—Twenty-three Europeans, 3 Eurasians, 85 Chinese, 282 Malays, 181 Indians, and 21 other Nationalities.

The chief diseases treated were Malaria, Bronchitis, Round-worm, Injuries, Constipation and Scabies.

Vaccination.—Three hundred and four vaccinations were done during the year as against 122 in 1918. Of these, 295 were successful, and 9 failed. This greater number of vaccinations was due to the precautions taken when a case of small-pox was imported. No other cases occurred.

Ages.—Six months 116, 7 months to 1 year 100, 1 year and above 88.

Meteorological.—The North-east monsoon blew from January to the end of March, when the South-west monsoon began and continued to December. The North-east monsoon commenced again about the fourth week of December.

The total rainfall during the year was 2,761·5 millimetres or 108·72 inches. The rainfall was more evenly distributed throughout the year than in previous years

The rainfall for the past 3 years is as follows:—

| | | | | | |
|------|-----|-----|-----|-----|----------------|
| 1917 | ... | ... | ... | ... | 185·82 inches. |
| 1918 | ... | ... | ... | ... | 123·14 „ |
| 1919 | ... | ... | ... | ... | 108·72 „ |

The wettest month was July when 447·5 millimetres fell. The greatest rainfall on any day of the year was 164·5 millimetres on the 12th July.

The maximum temperature in shade was 92·0 degrees on 26th and 27th April, and on 1st and 17th June.

The minimum temperature in shade was 70·0 degrees on 7th December.

| | | | |
|---|------------------------------|------|---|
| „ | maximum mean temperature was | 87·5 | „ |
| „ | minimum | 76·6 | „ |
| „ | mean temperature | 82·0 | „ |

Hospital.—The total number of admissions during the year was 194 as against 164 in 1918. Of these, 73 were Chinese, 50 Malays, 70 Indians and 1 Other Nationality. There were 5 deaths giving a percentage mortality of 2·50 as against 6·58 in 1918.

The chief diseases treated were Malaria 57 with 1 death, Pulmonary Tuberculosis 4 with 1 death, Venereal Diseases 10 with no death, Dysentery 3 with 3 deaths, and Enteric Fever 1 with no death.

Operations.—Eight operations were performed under General Anæsthesia of which 4 were major; few minor operations were performed under Local Anæsthesia.

Staff.—Remained as usual.

